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Two Clinical Lectures ON SOME RECENT EXPERIENCES IN VACCINE TREATMENT.

Delivered in the Medical School, Cairo, during April, 1915.

BY FRANK COLE MADDEN, M.D. MELB., F.R.C.S. ENG.,

PROFESSOR OF SURGERY, EGYPTIAN GOVERNMENT SCHOOL OF MEDICINE; SENIOR SURGEON, KASR-EL-AINY HOSPITAL, CAIRO.

GENTLEMEN,—It is not my intention in these lectures to enter into a detailed account of the theory of the treatment by vaccines, or of their preparation; but rather to tell you of the actual results I have obtained from the systematic use of vaccines in various conditions met with in ordinary routine practice.

THE TWO KINDS OF VACCINES.

In certain cases, and particularly in septic conditions and in lobar pneumonia, *stock* vaccines may be used, and I have always found the original vaccines, prepared under the direction of Sir Almroth Wright, by far the most satisfactory for general use. We are here dealing with diseases of known and definite bacteriology; and, as stock vaccines are prepared from many different strains, one is almost sure to have among them that particular variety of the organism present in the lesion under treatment, and thus we secure the curative effect of its special vaccine.

In the majority of cases, however, and particularly in those of more indefinite etiology, an *autogenous* vaccine is to be preferred, as in its preparation the true causal organism, or group of organisms, is isolated and grown, and a more potent and direct vaccine made available.

In the present series the autogenous vaccines have all been made in the laboratory of the pathological department of the School of Medicine by Dr. A. R. Ferguson and his very capable assistant, Dr. Anis Onsy, who have both taken the greatest care and gone to infinite trouble to ensure their sterility and potency.

DOSAGE.

On Dr. Ferguson's suggestion I have lately been starting with a comparatively small dose and rapidly increasing it until as much as 500–600 million are given at one injection. The strength of the vaccine is generally 250 million to 1 c.c., and when this is the case a start is made with 50 million. The intervals between the doses depend upon the case itself and the reaction produced, but they are never less than five days.

Practically all the vaccines are mixed and consist of the products of all the more evident organisms grown from the material collected, but with a very marked preponderance of the principal cultures. It is only very rarely that an absolutely pure culture of one organism is found.

GENERAL EFFECTS OF THE INJECTION OF VACCINE.

The general effect of an appropriate vaccine is to produce a definite reaction with fever and malaise, and usually also a distinct but temporary exacerbation of the symptoms of the condition under treatment. When this degree of reaction occurs the injections should be carried steadily on in increasing strengths at proper intervals. The maximum curative effect is generally gained in from 8-12 injections.

If no appreciable effect is produced by the first injection the dose should be considerably increased and the effect noted. If still no effect the particular vaccine may be abandoned, as no good is likely to result from its continuance. On the other hand, if a violent reaction occurs the next injection must be postponed for a few days longer than the proper time, and the same dose, or even a smaller one, given on the next occasion. A moderate reaction should be aimed at and is a favourable sign, and indicates the continuing of the course of injections of increasing strengths.

Before concluding that a case is not amenable to further vaccine treatment fresh cultures should be taken and a new vaccine made from the predominant organisms, and this sometimes succeeds admirably. In such cases it not infrequently happens that the original organisms have disappeared, or nearly so, from the second group of cultures, and an entirely new flora is presented. This may be due to an original accidental contamination, or more generally to the dying out of the first main group as a result of treatment by its own vaccine. The second vaccine prepared under these circumstances has often an extraordinary effect in clearing up the condition. I have especially noticed this feature in coli or coliform infections of the urinary tract. In inveterate cases a third examination may be made and a vaccine prepared.

In all cases a control examination of the secretion should be made at short intervals to gauge the efficacy of treatment and to judge its comparative effect. A considerable improvement may sometimes result from a series of injections, although the examination shows still a very profuse growth of organisms. New cultures should then be made and treatment pushed with the new vaccine prepared from them.

THE DIAGNOSTIC USE OF VACCINES.

Vaccines may be used diagnostically also. Thus, if a good dose of a strongly gonococcic vaccine fails to produce any reaction in a case of urethral discharge, it almost certainly means that the organism producing it is not the gonococcus. I have lately had a case of this kind under treatment in which a mixed vaccine from gonococcic, staphylococcic, and coliform bacillus cultures had no effect on the discharge, and further bacteriological examination showed an almost pure culture of a diphtheroid bacillus, with much shedding of epithelium in a whitish discharge without a single leucocyte in it.

So, also, in persistent cough, without any very definite physical signs to explain it, a stock pneumococcus vaccine sometimes has a startling effect, a clear indication that the cough is entirely a post-pneumonia condition. Conversely, when stock pneumococcic vaccines have no effect on the cough one generally finds that the respiratory flora is very profuse and diversified, and only a mass vaccine of the principal cultures is likely to have the desired effect.

TECHNIQUE OF THE INJECTIONS.

Great care must be taken to ensure asepsis in the injection of the vaccine. The upper arm is generally the most convenient site. The whole area is painted with iodine and the injection made into the deeper tissues, and the needle slowly withdrawn to prevent leaking of a portion of the vaccine. The stock vaccines are put up in sealed ampoules, the autogenous usually in small bottles with a rubber cover. This cover is smeared with pure lysol, the bottle inverted, and the needle

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If no appreciable effect is produced by the first injection the dose should be considerably increased and the effect noted. If still no effect the particular vaccine may be abandoned, as no good is likely to result from its continuance. On the other hand, if a violent reaction occurs the next injection must be postponed for a few days longer than the proper time, and the same dose, or even a smaller one, given on the next occasion. A moderate reaction should be aimed at and is a favourable sign, and indicates the continuing of the course of injections of increasing strengths.

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In all cases a control examination of the secretion should be made at short intervals to gauge the efficacy of treatment and to judge its comparative effect. A considerable improvement may sometimes result from a series of injections, although the examination shows still a very profuse growth of organisms. New cultures should then be made and treatment pushed with the new vaccine prepared from them.

THE DIAGNOSTIC USE OF VACCINES.

Vaccines may be used diagnostically also. Thus, if a good dose of a strongly gonococcic vaccine fails to produce any reaction in a case of urethral discharge, it almost certainly means that the organism producing it is not the gonococcus. I have lately had a case of this kind under treatment in which a mixed vaccine from gonococcic, staphylococcic, and coliform bacillus cultures had no effect on the discharge, and further bacteriological examination showed an almost pure culture of a diphtheroid bacillus, with much shedding of epithelium in a whitish discharge without a single leucocyte in it.

So, also, in persistent cough, without any very definite physical signs to explain it, a stock pneumococcus vaccine sometimes has a startling effect, a clear indication that the cough is entirely a post-pneumonia condition. Conversely, when stock pneumococcic vaccines have no effect on the cough one generally finds that the respiratory flora is very profuse and diversified, and only a mass vaccine of the principal cultures is likely to have the desired effect.

TECHNIQUE OF THE INJECTIONS.

Great care must be taken to ensure asepsis in the injection of the vaccine. The upper arm is generally the most convenient site. The whole area is painted with iodine and the injection made into the deeper tissues, and the needle slowly withdrawn to prevent leaking of a portion of the vaccine. The stock vaccines are put up in sealed ampoules, the autogenous usually in small bottles with a rubber cover. This cover is smeared with pure lysol, the bottle inverted, and the needle

plunged into the solution through the cover. When the required quantity is taken up into the syringe the needle is withdrawn and the small hole it has made immediately closes by the elasticity of the rubber.

CONDITIONS IN WHICH VACCINE TREATMENT HAS BEEN TRIED.

I have employed vaccines systematically in the following groups of cases:—

I. CONDITIONS DUE TO PYOGENIC MICRO-ORGANISMS.

Bacteriologically two main groups of pyogenic organisms may be differentiated, the staphylococci and the streptococci; but it must again be insisted upon that a mixed flora is almost invariably present and may include various forms of bacilli as well as cocci, with one family predominating. It is sometimes taught that localised lesions are staphylococcic in origin and spreading infections streptococcic; but this is only half true, as I have been able to prove in one case I shall mention later, where the most virulent cellulitis from an infected wound showed practically a pure culture of staphylococcus and was rapidly controlled by the use of a staphylococcus vaccine. It must be admitted, however, that the large majority of the boil and furunculosis class of cases call for staphylococcus vaccine; and the cellulitic or erysipelatous infections require a mixed staphylococcus and streptococcus stock; as comparatively few of the rapidly spreading infections yield to a strictly streptococcic vaccine.

These remarks apply to stock vaccines only, to which most cases react, but with such a mixture of organisms it will readily be understood that an autogenous vaccine should in all cases be made whenever the means are available.

Vaccine Treatment of Boils and Furunculosis.

The most dramatic and consistently successful results from vaccine treatment are seen in the modern treatment of boils and furunculosis generally. Indeed, so universally successful has this method been in my hands that I never employ any other. In most cases, in my experience, stock vaccines, if persevered with and used in sufficiently large doses, are rapidly successful. A start is made with 100 million mixed staphylococcus vaccine (Wright), followed by 500 million five days later, and at a similar interval by 1000 million. Generally this series of three injections suffices to cure the ordinary case; but in more intractable cases a further series, working rapidly up to 5000 million, will almost certainly be sufficient.

If improvement is slow or absent, even with these large doses, no further time must be wasted with stock vaccines, but a culture must be at once made from a recent lesion and an appropriate autogenous vaccine made. This rarely, if ever, fails. One commonly finds a mixed staphylococcus, aureus, albus, and citreus, the former group usually predominating and forming the major part of the vaccine. In these cases one must not be afraid to increase rapidly the strength of the vaccine, and if the reaction becomes feeble, or even negligible, and still the boils persist and come out in crops, a fresh examination must be made and an entirely new vaccine prepared. You must not be disappointed if one or even two sets of vaccines fail. Another attempt must be made and a systematic course carried out as, I must admit, I know of no other real treatment for such cases.

While the vaccine treatment is being used a simple dressing of iodine, or boracic or oxygen fomentations, or antiphlogistine, is applied to the lesions; and some form of yeast, preferably as staphylase (Doyen), or *levure de bière*, administered internally. Calcium sulphide, or lactate or chloride, and later a course of Easton's syrup or other similar tonic may also be prescribed.

It would be tedious to record individual cases of boils and furunculosis treated in this way, as recovery is to be expected in all cases if the treatment above described is faithfully and systematically followed. I do not remember to have had a single failure under such conditions.

A similar success generally follows this treatment in *Nile boils*, which are a particularly virulent variety of boils met with in this country, and which I have described at length, from a personal experience, elsewhere.[1] These more often provide a pure culture of staphylococcus aureus and, though sometimes rather resistant, eventually yield to the systematic course of treatment already detailed.

In both of the preceding classes of boils a stock vaccine exerts a powerful prophylactic effect for the future, and I have often insisted on what seemed to be an unnecessarily prolonged course of injections with the object of preventing recurrent attacks of boils.

Septic Conditions of the Skin.

Various septic conditions of the skin and lymphatics are also very amenable to stock staphylococcus vaccines. Among these are impetigo, sycosis, cutaneous erysipelas, lymphangitis, eczema with serous or purulent tendencies, quite apart from pustular acne, which will be taken in more detail later. Such cases, however, must not be blindly treated with vaccines, but other possible causes such as parasitic or syphilitic, and infectious fevers, must be first excluded before recourse is had to a stock, or, in difficult cases, to an autogenous vaccine.

I have also had some success in cases of *pyorrhœa alveolaris* with an autogenous vaccine, but in these cases it is not easy to decide which of the many organisms is responsible. In any case, vigorous local treatment must be carried out at the same time.

In *acne* generally I must admit the results have been on the whole very disappointing, the only real benefit being derived from the use of a mixed acne vaccine, the most important constituent of which is the staphylococcus albus or aureus. In non-suppurative acne I cannot remember a case in which any change for the better followed the use of the ordinary stock acne vaccine, though a temporary improvement does sometimes manifest itself when a course of the stock mixed acne vaccine is substituted.

Pustular Acne.

Comparatively recent and uncomplicated pustular acne does, however, very promptly react to the mixed acne stock in almost the same degree as an inveterate furunculosis; but in old cases, where there is much scarring about the sebaceous follicles, results are likely to be disappointing. The worst case I have had of this kind was a girl who had been very badly pitted with small-pox. In spite of all our efforts and a good reaction the ultimate result was not satisfactory. She did gradually get better, but I think this was almost entirely due to persistent and thorough local treatment.

[1] See Journal of Tropical Medicine, Oct. 1st, 1906.

Local treatment by the use of sulphur lotions, washing with hot water and sulphur soap, face massage and expressing the "blackheads," as they show signs of loosening in their small bed of pus, should be persisted in, and the digestive tract well looked after. Anæmia, too, in growing girls must be treated.

The usual strength of the stock mixed acne vaccine is 10 million acne bacillus and 1000 million mixed staphylococcus. This may be used at first, but when anything like an extended course of injections is needed, or the case only slowly reacts, it is best to make use of the ordinary mixed staphylococcus vaccine, in rapidly increasing doses, as in any other skin suppuration. The result will largely depend on the amount of scarring around the follicles and the possibility of completely emptying them of secretion. It so often happens that after cure appears to be complete a fresh crop of spots appear, the bacilli having been temporarily locked up in the depths and then bursting out afresh and starting a new infection.

The worst case of this kind I have had to treat was an Egyptian lady with very bad pustular acne of the face, which had come on since an attack of small-pox nine years ago. There was a great deal of pitting of the face generally and considerable scarring in the deeper layers of the skin. We made an autogenous vaccine of a very mixed composition and gradually worked her up to a dose of 300 million; and, though we flattered ourselves that there was an improvement at times, the final result was very much "as you were." We then tried mixed phylacogen and steadily persevered with this, but with disappointing results. Face massage and regular local treatment was carried out with hot steamings, rubbing with oxygen water, and everything we could think of, both internally and externally, but without real effect. Finally the case very considerably improved, not as a result of our treatment, but rather in spite of it.

Results in other Conditions.

A further very important use of vaccine, preferably a mixed staphylococcus and streptococcus, is in boils, carbuncles, and cellulitis occurring in *diabetes*. These conditions are only too common in Egypt and are so frequently fatal that every effort must be made to treat them adequately and early; and while giving first place to the adoption of the strictest possible general régime for diabetes, both in drugs and diet, a very useful ally is at hand in vaccine treatment. Here particularly one must make a practice of giving large and repeated doses of vaccines, alternating in extreme cases with antistreptococcic serums.

Finally, as will again be referred to, many of the urethral infections, though occurring with or secondary to gonorrhœa, are largely due to septic organisms and many obstinate cases of urethral discharge, whether containing gonococci or not, have been entirely cured by a vaccine containing a predominance of septic organisms and a stiffening of gonococci.

Among the more purely *streptococcic* infections the results of vaccine treatment are not nearly so satisfactory, due, to some extent, to the very large area involved and the hold the disease has already got before advice is sought or the vaccine can be prepared. But there are some special conditions in which very good if not brilliant results have been obtained. Thus in erysipelas, especially while still superficial, a good stock streptococcic vaccine, of from 5 to 20 million, should be used as a routine measure combined with vigorous local treatment.

A mixed staphylococcus and streptococcus vaccine may also be given in cases of cellulitis, but here also local treatment, even to the extent of multiple incisions, must be adopted, as well as all the other measures appropriate to a general septic infection, should the temperature persist and general symptoms arise.

Even in such an appalling condition as puerperal septicæmia vaccines have their place among the many forms of treatment that must be employed.

Traumatic Infections.—Septic Throats.

Other forms of septic infection from operation wound or injury may also be very promptly controlled by vaccines; but it is very necessary to make sure of the causal organism before beginning a series of injections. A particularly good instance of the necessity for this investigation occurred in a patient on whom I operated two years ago for hernia. He was unfortunately inadequately prepared for the operation, and it transpired later that he had just recovered from a septic, almost erysipelatous, condition of the skin in the neighbourhood of the incision. Whatever it was, three days after operation he developed a most virulent and rapidly spreading cellulitis, extending from the wound all up the side of the abdomen and chest even into the axilla. While waiting for the culture of the organisms from the pus I injected streptococcic vaccine and antistreptococcic serum in large quantity. Improvement was slow, but we were hardly prepared to find that the culture showed an almost pure growth of staphylococcus aureus. After many incisions and full doses of staphylococcus vaccine recovery much more rapidly occurred; but about a month later two small patches of cellulitis reappeared, but readily yielded to local treatment.

In all vaccine treatment it must be remembered that an incision into the affected part acts like a vaccine, as it produces a phagocytosis which will itself have a vaccinal effect, quite apart from the evacuation of pus and septic serum and the relief of tension by the incision. Care must therefore be taken not to give a strong dose of a vaccine at the same time as the incision or too violent a reaction may occur. Further, vaccine must not be given during the stage of depression or of anaphylaxis resulting from the vaccinal effect of the incision.

In one case of deep cellulitic suppuration around the elbow in an old lady staphylococci and diplococci were isolated, but the resulting vaccine was not of much value, and the joint becoming involved and the bones eroded amputation had to be performed in the middle of the arm.

I have seen good results follow the use of streptococcic vaccine in septic throats, though with such a diversified flora it is not possible to guarantee a successful result in all throat cases. But in general terms the true "septic throat" is often very greatly benefited by vaccines; and, in the absence of a diphtheria or diphtheroid bacillus, when a throat is slow in clearing up, streptococci, with or without staphylococcic vaccine, should always be tried. The distinction between the various organisms that produce ordinary sore, septic, or membranous throats is very difficult to make and often involves a lengthy and elaborate process before the true causal organism can be definitely ascertained. On this account autogenous vaccines are not very practicable. A stock vaccine may possibly meet the case and should certainly be tried, though too much must not be expected of it.

II. BACILLARY INFECTIONS OF THE URINARY TRACT, PARTICULARLY WITH BACILLUS COLI OR COLIFORM ORGANISMS.

These cases are far commoner than is generally supposed, and in most cases it is almost impossible to trace the origin of the infection. The usual symptoms are an increased frequency of micturition, with considerable burning and irritation during and after the passage of the urine, with a peculiar characteristic cloudy appearance due to very fine granules suspended in the urine. One case may have ordinary cystitic symptoms, but others have in addition a series of rigors, with severe pain in the back and loins, somewhat relieved after micturition. There is generally a high septic temperature, and the urine may be loaded with pus when the disease is at its height. The diagnosis is made by a bacteriological examination of the urine and its subsequent culture. Not infrequently a pure, or almost pure, culture of bacillus coli is obtained. Various groups of coliform bacilli may also appear in the culture, and in making a vaccine these have to be considered and utilised in its preparation.

These cases are very difficult to treat without vaccines, but relief may be obtained, though the organisms may persist, by the use first of all of alkaline diuretic mixtures and later of acid phosphate of soda and large repeated doses of urotropin. In my experience, however, relief is only temporary, and a recurrence is almost inevitable. This may even be the case when a vaccine has been tried in only a half-hearted way.

Women are particularly liable to infection, probably from accidental contamination of the urethra from the vagina or rectum, but men are by no means exempt. The urine is collected, after careful disinfection of the external genitals and meatus, either by catheter or by passing urine into a wide-necked sterilised flask. Every care is taken to prevent accidental contamination from without. Vaccines are then made on the usual principles and a very careful watch kept on the urine. After three or four injections a fresh culture should be made, and if necessary a new vaccine; and this may have to be done two or three times before a cure is obtained. After a good course of treatment everything should be stopped and an entirely fresh examination made 14 days afterwards. Recurrences are common, and the only way to guard against them is to keep a regular watch on the urine and culture it frequently till there has been a complete absence of signs or symptoms for at least a month.

In two cases, after a very vigorous treatment, cure appeared to have been attained when pregnancy occurred, and the condition recurred in a most virulent form a few days after the child was born. This is a very frequent occurrence and must be guarded against. Some degree of protection may be afforded by prophylactic doses of an ordinary stock bacillus coli vaccine during the later months of pregnancy.

In one patient, with marked cystitic symptoms, the first examination showed two different bacilli, thicker and larger than bacillus coli, and a vaccine was made from them. This was persisted in till no reaction occurred, but quite suddenly the original symptoms reappeared, apparently directly traceable to a dose of cascara which produced a violent action of the bowels. The examination of the urine now showed lots of coliform bacilli and bacillus enteritidis. It was as though the stirring up of the organisms in the bowel also stirred up the dormant bacilli in the bladder. Improvement being after this reawakening rather slow with the original vaccine, a further examination was made and showed a pure culture of bacillus coli, obviously due to accidental infection, as a specimen two days later, under conditions that absolutely precluded the possibility of outside infection, was absolutely sterile, and so it continued. Since that time the patient has gone through her pregnancy and confinement without any sign of recurrence. It seems certain that the coliform bacilli were the true cause of the condition and they were eventually killed by their own vaccine, but not until 500 million (5 c.c.) had been given as one final injection.

One must always be on the look out for coli and coliform infections and I know of no better treatment than that by vaccines.

I have also seen this condition of infected bladder, ureters, and pelvis of the kidneys after infection of the bladder by catheterisation during severe typhoid, and here an autogenous vaccine had a very good result. I cannot tell you the composition of this vaccine, as it was made in London. A good result also followed a course of vaccines in a somewhat similarly infected urinary tract secondary to influenza.

To some extent also stock bacillus coli vaccine may be useful in cases of appendix abscess when, by the smell and other symptoms, the infecting organism seems to be bacillus coli; and in cases of colotomy or other intestinal fistula, acquired or post-operative, it may considerably improve the appearance of the wound and add to the comfort of the patient.

III. GONORRHŒA AND ITS COMPLICATIONS.

Gonococcic vaccines have been much used, but I must candidly admit that in my hands the results have been very disappointing when the gonococcus is the principal infection. Stock vaccines are generally tried, but are destined to failure. In acute gonorrhœa vaccines are contraindicated, for as much phagocytosis as is possible is going on already, and the only effect of a vaccine would be to produce a violent reaction which may have very serious consequences. In chronic gonorrhœa, *pure* gonococcus autogenous vaccines are rarely of much value, and no dependence at all can be placed on *stock* vaccines. When an autogenous vaccine is made from the urethral discharge and from the early morning urine it is surprising how many organisms other than the gonococcus are found in the cultures. The commoner groups are the septic organisms, especially the staphylococci, a short bacillus, a diphtheroid bacillus, diplococci of various sizes, &c., and to be of any use a mass vaccine, to which is added a further quantity of a pure gonococcus culture, must be made.

Such a vaccine may be of use in chronic gonorrhœa, producing rapidly an improvement, both clinically and bacteriologically, the few gonococci that are ultimately left dying out or becoming cast off by epithelial cells or leucocytes till eventually a cure is effected. These vaccines are, however, much more useful in the presence of local complications, such as cystitis, ureteritis, pyelitis, prostatitis, and epididymitis. One must always remember the dictum of Ricord that "one knows perfectly well when a gonorrhœa begins, but it is the privilege of God to be able to tell when it will end." This admission, from such an acknowledged master of this part of the craft of surgery, sufficiently indicates the necessity for the constant and thorough application of all the many forms of local treatment and the unwisdom of placing too much reliance on vaccine injections.

All difficult cases of gonorrhœa must be submitted to a thorough course of vaccines, the progress of the treatment being gauged by repeated bacteriological examinations at short intervals. To illustrate the difficulty of preparing an appropriate vaccine for these chronic urethral infections I would like to give you a short list of the different organisms found by Dr. Ferguson in a recent series of cases. Among others the following were found: Gonococci in various stages of development, some inside the leucocytes, others free; some in epithelial cells, some freely multiplying, others old and mature; staphylococci of all kinds; short coli-like bacilli; pneumococcus-like cocci; less definite diplococci, larger than gonococci and Gram-positive; diphtheroid bacilli; short stout bacilli. One of the most recent cases yielded very few extracellular gonococci, short stout bacilli, staphylococci, and diplococci (Gram-positive). A mass vaccine gave very good results in the ureteritis and pyelitis, for which treatment was sought, combined with steady dilatation of a constricted posterior urethra.

The last case worthy of notice was one of old gonorrhœa of ten years' standing, which yielded finally to very radical local treatment. Recently he started a fresh urethral discharge which, on examination, consisted entirely of epithelial cells, and an almost pure culture of a diphtheroid bacillus. No leucocytes or pus cells were present, but the epithelial cells were packed with the diphtheroid bacillus. A steady course of large irrigations of bladder and urethra by Janet's method with 1/10,000, reduced gradually to 1/5000, perchloride of mercury solution proved effective, and the final *coup de grâce* was given by oxycyanide of mercury in similar strengths.

To sum up, the vaccine treatment of gonorrhœa is not to be thought of in the acute stages of the disease, but in chronic gonorrhœa a mass vaccine is sometimes useful in clearing up an old urethral discharge, and is quite good in the local complications of the disease. No vaccine can be expected to be of any benefit unless it is combined with vigorous but kindly local treatment, in which the topical application of nitrate of silver and other cauterising drugs to the sore places and follicles through a urethroscopic tube finds a prominent place.

IV. Diseases of the Respiratory Tract.

Pneumococcic vaccine, either as stock for acute lobar pneumonia or as an autogenous vaccine in cases of old chronic cough, especially if consequent upon a former inflammation of the lungs, is most useful. I would certainly recommend that all cases of acute pneumonia, whether lobar or lobular, should have the benefit of a stock pneumococcus vaccine, 20–50 million, but you must not depend on this entirely.

I have had most excellent results with a mixed pneumococcus vaccine in chronic cough, of which the following three cases will serve as typical cases. In one case there had been a history of a "congestion of the lungs" some weeks before and a persistent cough remained, especially troublesome at night. The sputum on examination was found to be full of typical pneumococci and other species of diplococci common in throat and lungs, and groups of micrococcus catarrhalis. A culture injected into a guinea-pig caused its death in less than 48 hours from pneumococcus septicæmia. A vaccine was prepared, and after four injections the cough completely disappeared and did not return. The flora of the sputum (which was now very difficult to obtain) had completely altered and only contained a very few pneumococci. I used this same vaccine in two other cases of cough with a previous history of pneumonia with equally satisfactory results.

One other case was most puzzling. A tuberculous history, with implication of pleura, lungs, and inguinal glands, apparently recovered from. Then a series of rigors, with deep pain at the right dome of the diaphragm, with the probability of liver abscess. Exploration with needles entirely negative after many punctures under anæsthetic. Slight pleural rub posteriorly at the base and some dullness. Thinking it might be a deep-seated patch of pneumonia in the base of the right lung I gave this vaccine with extraordinary success. The temperature stopped, the pain and discomfort rapidly disappeared, and after three injections everything cleared up. The expectoration of a little blood-stained sputum confirmed the diagnosis and explained the result of the vaccine.

When the cough is complicated with *asthma* one must not expect such good results, as the flora of the bronchi and air passages generally is so diverse. One case of this kind, for instance, of long-standing bronchitis and asthma gave three main groups of organisms, pneumococcus, Friedländer's bacillus, and a white staphylococcus, the two latter predominating. A mass vaccine was made and injected, rather irregularly, without much real benefit, though the attacks of bronchitis, which had been a prominent feature of the case, diminished in frequency and severity. In another case the cultures showed an almost pure culture of the influenza bacillus, but I was not able to follow this case up, as he left Cairo shortly after the injections were started.

In general the prospects of relief in asthma depend upon the purity or the admixture of the organisms found in the sputum or the nasal mucous membrane; but in all cases, after local treatment has failed to effect a cure, a mass vaccine should be tried. Special asthma vaccines and hay fever vaccines are prepared, and a micrococcus catarrhalis vaccine also for coughs, but I have no personal experience of them and should place much more reliance on a locally made autogenous vaccine in all cases of this kind, but would not promise too much.

The Prophylactic Use of Vaccines.

The value of typhoid vaccine has been lately established beyond all question. To a very large extent it confers an immunity which, however, is not absolute. It certainly modifies the severity of the attack should one supervene. Recent reports show that the incidence of typhoid among the uninoculated is about 30 per cent., but among the inoculated it is only 0·2 per cent. The usual strength of the injection is 1000 million, followed by 2000 million ten days later.

Similarly, injections of pneumococcus vaccine are useful before operations on the tongue, mouth, and throat, and especially so before splenectomy. Stock bacillus coli vaccine may also be of use before severe appendicitis operations and also before prostatectomy.

Phylacogens are "sterile aqueous solutions of bacterial derivatives, prepared by mixing the filtrates from pure cultures of a long series of septic and of other organisms to form the mixed stock phylacogen." This is used in the same class of cases

as the septic-organisms vaccine, and a proportion of the special organism derivative is added for use in such conditions as erysipelas, rheumatism, and gonorrhœa. I have used all the phylacogens, but have never seen any benefit from them except in rheumatism, and then only after a long series of rapidly increasing injections.

I think I have said enough to convince you that in many conditions vaccine treatment is well worthy of trial; and that in certain cases it is the only reliable treatment. But once more let me impress on you not to forget all the other forms of treatment at our disposal, both local and general. Intelligently used in the way I have indicated, you will find you have in vaccines a very useful ally in combating quite a large number of troublesome conditions.

MALIGNANT AORTITIS:
HYPOPLASIA OF THE AORTA.

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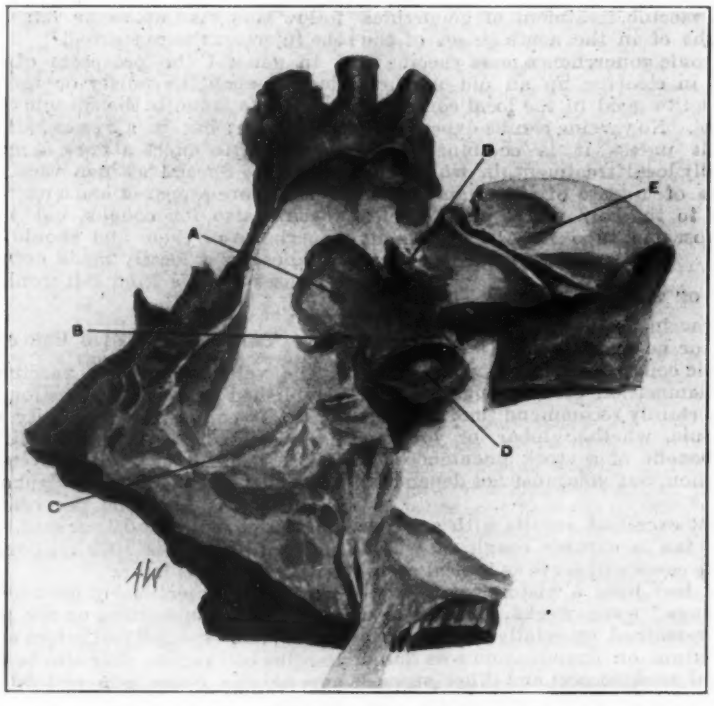
THIS condition, in which an aortic lesion comparable to malignant endocarditis presents the clinical features of the latter disease, is very rare. Acute aortitis as the result of various infections—for example, influenza—has long been recognised, but the symptoms are not those of malignant endocarditis and, as Sir Clifford Allbutt[1] has insisted, are prone to assume an anginoid character. Infective or malignant aortitis may accompany and be secondary to malignant endocarditis, the aortic lesion being within reach of vegetations on the aortic valves and merely an extension by contact of the cardiac disease. There is another form of infective aortitis which must be distinguished from that now under discussion; Scheuer[8] has collected seven cases of infective suppuration beginning in the media and adventitia of the aorta, which perforates from without inwards and leads to rupture of the aorta. In Scheuer's own case, which was one of pyæmia, four pints of blood were found in the left pleural cavity. In the case recorded by Vanzetti[12] the cause of the lesion was embolism of the vasa vasorum by the pneumococcus. Infective and ulcerative aortitis, like malignant endocarditis, is more likely to supervene on an old lesion than to occur in a previously healthy part. Thus the aorta is usually already atheromatous, as in F. C. Turner's[10] cases and in Boinet and Romany's[2] case of staphylococcic vegetations in an atheromatous aorta after influenzal broncho-pneumonia. As examples of infective aortitis without previous disease of the vessel wall reference may be made to Schweizer's[9] case of a boy, aged 14 years, with septicæmia and pericarditis; the posterior part of the aortic arch was deeply ulcerated and showed adherent clot containing staphylococci. There were multiple abscesses in the spleen and kidneys. Boulay[3] also reported a case of vegetative endarteritis in the thoracic aorta which gave rise to multiple embolisms.

A warrant engineer officer, aged 34 years, was admitted into the Royal Naval Hospital, Haslar, on Feb. 27th, 1915, with fever, gastric irritability, and vomiting. His illness dated from an attack of influenza a month before. On admission he was markedly anæmic without any evidence of ulceration or growth of the alimentary canal, as shown by a negative reaction for occult blood in the fæces, or of intestinal parasites as proved by microscopical examination of the stools. There was no history of syphilitic infection; a Wassermann test was not done. The spleen was never palpable. There was always a trace of albumin in the urine. The blood examinations showed a progressive and grave secondary anæmia with a leucocytosis. On March 1st the red blood count was 2,280,000, the hæmoglobin 45 per cent., and the colour index 0·98. Poikilocytosis and anisocytosis were well marked, and there was some polychromatophilia; no hæmatoblasts were seen. There were 23,000 leucocytes with a differential count of polymorphonuclears 86 per cent., lymphocytes 10 per cent., large mononuclears 3 per cent., and eosinophils 0·5 per cent. On March 12th the red count was 1,950,000, hæmoglobin 40 per cent., and the colour index 1. The changes in the red cells were the same as before. The leucocyte count was 25,800 and the differential count practically identical with that on March 1st. On April 1st the red count was 1,280,000, the hæmoglobin 20 per cent., and the colour index 0·7. The leucocyte count was 19,400. Examination of the blood for malarial parasites, for agglutination

FIG. 1.

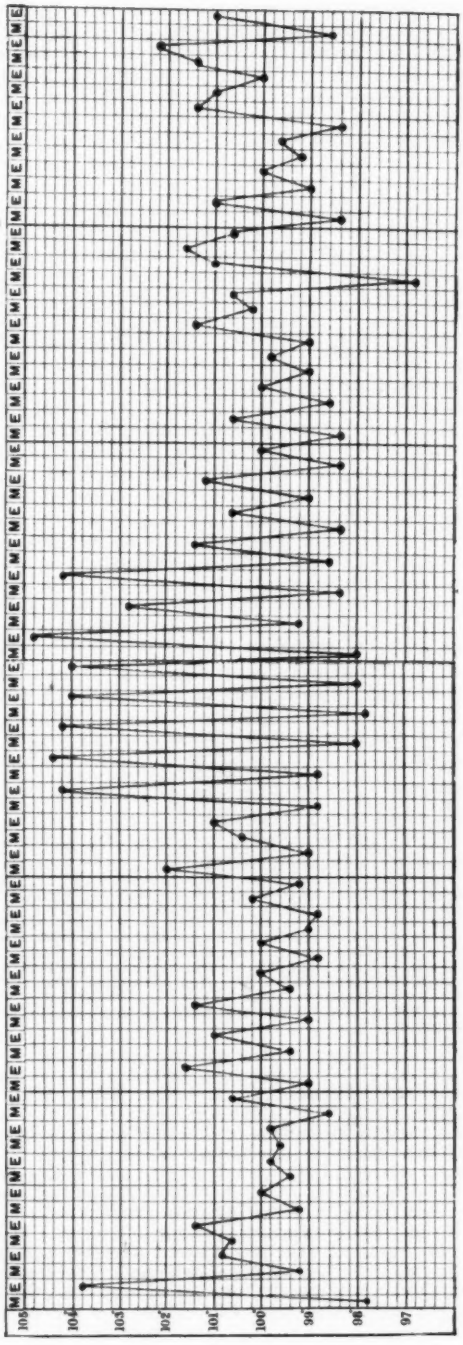


The aortic region of the heart (C) and the arch of the aorta showing area of malignant aortitis (A) with vegetations (B). The left branch of the pulmonary artery (D) is seen cut across. The commencement of the thoracic aorta (E) is also shown above the line pointing to B. In order to show the thoracic aorta the parts have been somewhat displaced, so that there appears to be a cut between the edge of the ascending part of the aortic arch and the edge of the thoracic aorta. (Drawn by Deputy Surgeon-General A. G. Wildey, R.N.)

Temperature Chart of Case of Malignant Aortitis.

of bacillus typhosus, and for micro-organisms by cultivation in bouillon was negative. Except for a minute petechial hæmorrhage near the apex of the heart on May 10th no cutaneous hæmorrhages, rashes, pigmentation, or tender spots were ever seen, and retinal hæmorrhages were not detected. The heart was dilated, and a systolic murmur, loudest over the pulmonary artery, was audible over the whole præcordia, but the character of the murmur did not change while the patient was under observation. The pulse-rate varied considerably; it was almost always over 100, and when the temperature was high ran up to 140. There was pain without obvious swelling or redness in the left shoulder for some days early in April. About April 17th there was thrombosis of the external saphenous vein in the left leg. At first there was no œdema, but as time went on this appeared in the feet and spread to the trunk and scrotum. Except for the last few days of life the temperature was always raised (*vide* chart). Directly after admission he had a rigor (temperature 103·8° F.). On March 12th five septic teeth were removed, and from March 15th to 22nd the temperature ran up daily to 104° or above and fell in the morning to normal or below. On March 19th a sensitised streptococcic vaccine (1000 millions) prepared by Dr. M. H. Gordon was given hypodermically and was followed by a rigor. After March 22nd the temperature became lower, and was above 100° until April 16th, from which date it oscillated around 99°. Throughout the illness vomiting was frequent and some epigastric tenderness was commonly present, but no abdominal tumour was ever made out. About April 16th he was very ill with a feeble and rapid pulse (140), and, although he rallied after this for a time, he gradually became weaker and more apathetic, and died quietly on May 16th.

Temperature Chart of Case of Malignant Aortitis.



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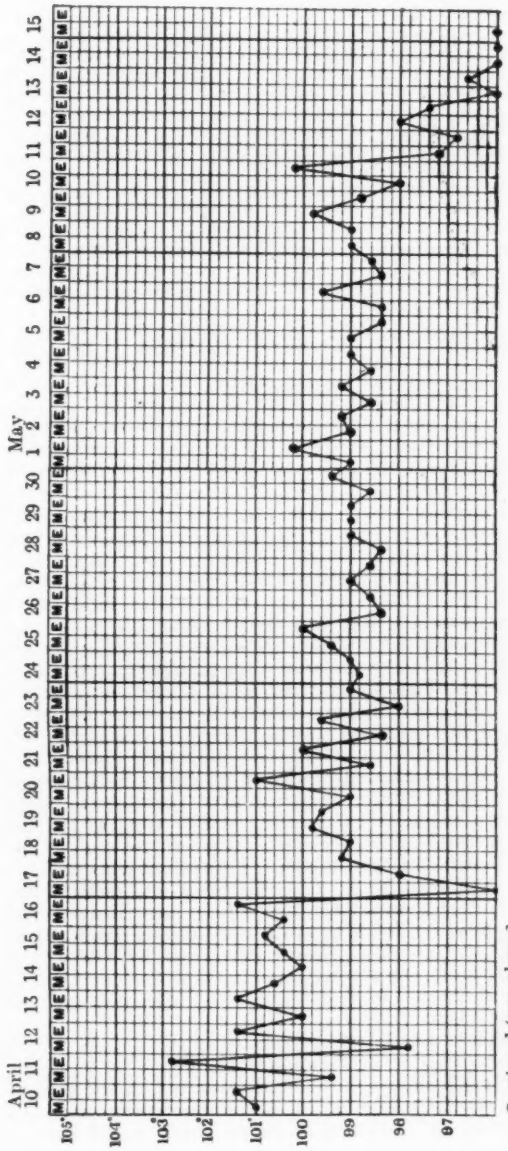

Continued from above.]

Necropsy.—Both pleuræ contained serous fluid, the right about one pint, the left less. Nothing abnormal was noted about the remains of the thymus. The lungs were normal. The pericardium showed excess of fluid, but was free from pericarditis and petechiæ. The heart weighed 14 oz. The myocardium was pale, but without obvious "tabby-cat" striation. There was not any ante-mortem clot in any of the cavities, nor any recent endocarditis. The aortic valves were much thickened, and two of them were welded together by a calcified bar, but there were no vegetations. In the ascending aorta, 2 centimetres (¾ inch) above the aortic valves, posteriorly and to the left, there was a roughly circular area (A, Fig. 1) 3 centimetres in diameter, or about the size of half-a-crown, resembling the wall of an aneurysm and somewhat bulged outwards. The intima was absent, and thus exposed a slightly roughened surface with undermined, torn and ragged edges, to which two masses of granular fibrin were loosely adherent (B, Fig. 1). It was quite unlike an ordinary atheromatous ulcer. The ulcerated area was so far from the aortic valves that it was clear that it was not due to mechanical damage inflicted by the rigid valves. In removal of the heart this ulcerated area was cut across. The edges have now been sewn together and the specimen (No. 1629) is in the Pathological Museum of the Royal Naval Hospital, Haslar. Deputy Surgeon-General A. G. Wildey, R.N., has most kindly sketched the reconstructed specimen with the omission of the cut which would have confused the photographic appearances. Between its outer surface and some adherent bronchial glands there was a small collection of greenish pus, smears of which did not reveal any micro-organisms. The whole aorta was small, remarkably thin-walled (hypoplasia), and except for a few small patches in the dorsal region very free from atheroma. The abdomen contained some ascitic fluid. The omenta were almost free from fat. A small pedunculated body, the size of half a pea, was attached to the anterior surface of the mesentery. The œsophagus, stomach, and intestines were normal. The spleen, 17 oz., was enlarged and soft, with prominent Malpighian bodies, and contained one large and several small infarcts, white in colour and neither raised nor depressed. There was no softening of these infarcts. The large infarct was firmly adherent to the diaphragm. The splenic vein was normal. The kidneys (right 6 oz., left 10 oz.) were large, pale in colour, and suggested tubal change. Both pelves contained innumerable minute uric acid concretions. I am much indebted to Temporary Surgeon L. Pearce Gould, who carried out the blood examinations and the necropsy.

Remarks.—The most probable diagnosis during life was subacute bacterial endocarditis; but the negative result of the blood culture, which, however, was only carried out once, the absence of splenic enlargement and of obvious infarctions, and to some extent the stationary condition of the cardiac signs, were recognised as militating against this view. The constant albuminuria was, perhaps, not given its proper value as evidence in favour of malignant endocarditis, and the spleen, though obviously enlarged at the necropsy, was never felt during life. An alternative diagnosis—latent carcinoma of the cardiac end of the stomach—was suggested by the association of gastric symptoms, grave secondary anæmia, and fever, while the occurrence of thrombosis was quite compatible with this interpretation. Trousseau, who insisted on the association of thrombosis and gastric carcinoma, exemplified this in his last illness, and remarkable instances of multiple thromboses in this disease have been described by Osler and McCrae.[7] Pernicious anæmia was excluded by the blood count, and especially by the presence of leucocytosis.

The morbid lesion present in this case, which appears to be analogous to malignant or subacute bacterial endocarditis, being situated in the arch of the aorta instead of on the endocardium, was not proved to be infective, as the only blood culture made was negative and no bacteria were seen in a smear from the pus found just outside the aortic lesion. Libman[6] has shown that bacteria-free periods occur in subacute bacterial endocarditis; but as the blood culture was made on April 4th, when the disease as shown by the temperature chart was active, it would hardly be justifiable to explain the failure to obtain a positive result by the hypothesis that this was an analogous bacteria-free period in a case of infective aortitis. Libman, however, points out that in cases of subacute bacterial endocarditis with high temperatures and with very well-marked oscillations blood cultures are sometimes negative, although bacteria are present in enormous numbers in the vegetations in the heart; and presumably this might hold good in the analogous condition of infective aortitis. Although the view that the case was one of infective aortitis is attractive, it is safer to describe it as one of malignant aortitis.

Hypoplasia of the aorta, described in 1872 by Virchow as an etiological factor in chlorosis, has been somewhat discredited in this connexion, though Burke[4] and van Ritoök[11] have since insisted on this association. Apart from the congenital form, which may be associated with other defects, it has been thought that hypoplasia may be acquired as the result of cachexia, anæmia, and feeble action of the heart. In the majority of cases of aortic hypoplasia the clinical picture is that of a failing heart (Burke). In a number of specimens of true aortic stenosis in St. George's Hospital Museum the aorta has been extremely free from atheroma and comparatively thin. In the present instance aortic stenosis and hypoplasia were associated. A point of some interest in this case is that the malignant or ulcerative aortitis, which is analogous to malignant endocarditis, occurred in a hypoplastic aorta; this sequence of events, therefore, is analogous to the incidence of malignant endocarditis in a damaged or congenitally defective valve. The only focus of infection discovered was the oral sepsis; but according to Burke and van Ritoök hypoplasia of the aorta, like lymphatism with which it may be combined, diminishes the resistance to infection.

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LITERARY INTELLIGENCE.—Messrs. J. and A. Churchill announce for publication in September the sixth edition of "The Operations of Surgery," originally written by W. H. A. Jacobson, now entirely revised by Mr. R. P. Rowlands, surgeon, and Mr. Philip Turner, assistant surgeon, to Guy's Hospital. Of the 800 illustrations, 420 have been specially drawn for this edition, and about 40 of the figures appear in colour. Also "A Textbook of Surgery," by Mr. Richard Warren, assistant surgeon to the London Hospital, and examiner in surgery to the University of Oxford and the Society of Apothecaries. The book will contain over 500 original illustrations.

ON A CASE OF

PLACENTA PRÆVIA WITH THREATENED PUERPERAL ECLAMPSIA, TREATED BY CÆSAREAN SECTION.

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To anyone who is accustomed to abdominal surgery on the one hand and to the problems of practical obstetrics on the other, Cæsarean section presents itself as a method of cutting the Gordian knot of difficulty in some of the worst cases. Undertaken at a sufficiently early moment and with an uninfected parturient canal it is neither difficult nor dangerous, and is a welcome alternative to some of the older and more risky procedures. The following is a case in point.

Mrs. A——, aged 32, primigravida, was brought to me on March 24th, 1915, by her husband, who is a medical man. She was in the thirty-third week of pregnancy and was suffering from œdema of the face, hands, and feet, with much albumin in the urine. She had experienced good previous health except that she had scarlet fever at 21 without kidney complications, and this was followed ten months later by a severe attack of enteric fever, which kept her in bed for 16 weeks owing to the development of thrombosis in the left leg, which she dragged more or less for two years afterwards. Recovering completely, she trained as a nurse for four years without a day's illness. She married in January, 1914, and became pregnant in August, but had no vomiting or troublesome symptom in early pregnancy. She quickened on Dec. 14th. About Feb. 19th of the present year she found that her face and hands and feet were swollen. After a few days her husband found that albumin was appearing in the urine.

When I saw her on March 24th she had no headache or vomiting or symptom of importance beyond œdema, but the urine contained about 3 degrees of albumin on Esbach's scale with the picric acid test, and there were found hyaline, granular and epithelial casts with some leucocytes, and the amount of urine for a few days had been below normal. We agreed that she should be treated by rest in bed, with milk diet, purgatives, diuretics, and diaphoretics. Under this treatment the amount of albumin diminished to about 0·5 degree Esbach, but it subsequently rose again to 3·5 degrees, and she had some headache and vertigo, with itching of the skin, aching in the limbs, salivation, and curious attacks of coryza in eyes and nose coming on suddenly. The pulse grew hard and later on the vision became dim.

On April 25th she had an attack of severe uterine hæmorrhage. I saw her at home on the 26th. The hæmorrhage had nearly but not quite ceased, but she was somewhat blanched. There was no dilatation of the cervix, and I did not reach any presenting part on digital examination. The child lay with the head below in the left occipito-anterior position, and the fœtal heart-rate was 135. The same day she was brought to a nursing home in Leeds, a journey of some 20 miles. At night the vision was so dim that she could not distinguish any object. On the next morning (April 27th) there was practically no hæmorrhage. I performed Cæsarean section, assisted by Mr. E. R. Flint, of the Leeds Infirmary. Dr. S. T. Rowling anæsthetised her with a mixture of chloroform and ether. The child was delivered alive and breathed readily, and was a female weighing 4¾ lb. The placenta occupied the lower two-thirds of the uterine wall on its antero-lateral aspect, and a tongue of placenta extended down as far as the orificium internum. An elongated blood clot was attached to the placenta at this point. It was quite easy to peel all placental attachment from the uterus by using a gauze swab, and this involved almost no hæmorrhage. There was not more bleeding than in an ordinary Cæsarean section with normally placed placenta. The uterus retracted well and was sutured with iodised catgut.

The patient stood the operation very well. There were no signs of shock. In my experience, extending now to about 40 cases, Cæsarean section causes very little shock, far less, in fact, than any form of accouchement forcé. The wound healed without any suppuration; there was no rise of temperature and no offensiveness of the lochia. She suckled her child from the fourth day onwards. In four days she could read clearly. The albumin rapidly diminished in quantity, but it was three weeks before it had quite disappeared. She made an excellent recovery and the baby steadily gained in weight. Mother and child left the nursing home quite well on May 21st, and have continued well up to date.

Can so-called *unavoidable hæmorrhage* be avoided? When the first gush has drawn attention to the malposition of the placenta further ante-partum hæmorrhage can be prevented by abdominal Cæsarean section. If labour has begun and the cervix is dilating the ordinary methods of treatment may be indicated rather than Cæsarean section, each case being judged on its merits. When hæmorrhage occurs before labour the indications are for terminating pregnancy. There is danger in waiting, for the hæmorrhage as a rule recurs again and again, and to wait may have fatal results. Some years ago a medical man met me and said that he had a case of placenta prævia who had had severe hæmorrhage which had ceased, but that if it recurred he would send for me. A week later I was sent for and arrived to find the patient *in extremis* on account of a violent recurrence of flooding. I have always this case in mind when one hæmorrhage has occurred, and this was one of the considerations which made me propose operation in the present case. True, I had not actually diagnosed the placental misplacement, but if it had proved to be a case of detachment of a normally placed placenta, the so-called "accidental" hæmorrhage, Cæsarean section would have been quite as much indicated.

In the above case it seems to me that for the threatened eclampsia as well as for the placental misplacement Cæsarean section was very good treatment. It terminated the pregnancy, it avoided the whole process of labour with the dilatation of the soft parts which is such a potent provocative of convulsions, and it saved the child's life, which is so seriously threatened in such cases; and the rapid disappearance of the albumin, the restoration of the full function of the kidneys, and the relief of the eye symptoms were most satisfactory. All vaginal interference was avoided, and with this the danger of infecting the parturient canal. I am not pretending on the strength of this case to settle the vexed question of the operative as opposed to the expectant treatment of eclampsia, but contend that this was the best treatment for this case. I published another case of puerperal convulsions in a young primipara successfully treated by hysterotomy,[1] and I have recently had another successful case in the Leeds Infirmary which will be recorded in due course.[2]

Leeds.

[1] Brit. Med. Jour., Oct. 3rd, 1914.

[2] See a very interesting discussion of the treatment of eclampsia by Cæsarean section by Petersen, American Journal of Obstetrics, June, 1914.

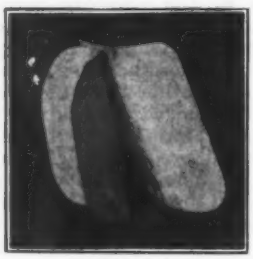
NORTH DEVON INFIRMARY, BARNSTAPLE.—At the annual meeting of the subscribers to this infirmary, which was held on July 28th, it was stated that Dr. Vermylen, a Belgian medical man, who had been appointed house surgeon to the institution in February last, had performed his duties to the entire satisfaction of the medical staff and the committee.

MECHANICAL TREATMENT OF COMPOUND AND SEPTIC FRACTURES.

BY ROBERT McQUEEN, M.R.C.S., L.R.C.P. LOND.,
CAPTAIN, R.A.M.C.

READERS of medical works must have been struck by the endless variety of splints which have been suggested for the treatment of compound and compound septic fractures met with in this war. Many of these splints require a highly skilled staff to make them and are expensive, and in many instances are not adaptable to the cases. What is aimed at is a cheap splint which meets any exigency that may arise in the nature and locality of the wounds and allows of the dressing and drainage of the wounds without the removal of the splint, so maintaining immobility of the fragments, to say nothing of the comfort of the patient.

FIG. 1.



Axilla splint.

Acting on a suggestion given me by the article by Mr. Robert Jones in the *British Medical Journal* of Jan. 16th, I began to work out a series of splints which would combine the following points: cheapness, lightness, comfort, adaptability, cleanliness, immobility of the fragments, dressing of wounds without having to remove the splint, and lessening the cost and waste in the dressings and bandages.

FIG. 1B.

Axilla splint, with forearm band.

The splints are made of an aluminium bar, ⅛ by 3/16 inch for the arm splints, ¾ by ¼ inch for the leg splints, cut to the required lengths, to which are attached bands varying in breadths made of thin galvanised iron sheeting, 22 gauge. Originally I had the bands riveted on to the bar, but I find it more convenient to rivet on to the bands a grip to hold the bar, so that the position of the bands can be altered (see Figs. 3A, 3B, 11, and 11A). The bands can be easily pressed to the size of the limb and are padded with thin elephant plaster or felt fixed on by lead plaster or seccotine (Figs. 4 and 5). The angle for the forearm splint for the correction of wrist-drop can be made and altered by bending the bar (see Fig. 2B), also two or even three of the splints for the upper extremity can be used together or combined as one splint if necessary (see Figs. 3 A, B, C, D, E, F). In the case for which the splint shown in Figs. 3A and B was made there was a simple fracture of the upper end of the humerus with an extensive compound comminuted fracture of the lower end of the humerus and upper end of the ulna with wrist-drop. The splints are kept in position by a single turn of a bandage, or preferably by a strip of adhesive plaster encircling the limb and the bands (see Figs. 6 and 10A); the dressings only require two or three turns of a bandage to keep them in place (see Fig. 6). The splint shown in Figs. 10 and 10A was made with a shelf to rest the remnants of the patient's elbow on, as a piece of shrapnel had completely shattered and destroyed his elbow-joint; the olecranon and a large piece of the condyles of the humerus were missing, and the septic condition of the wound necessitated two and three dressings in 24 hours.

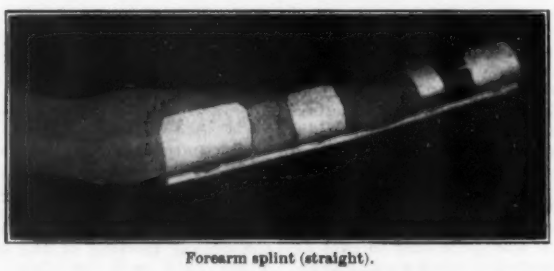
FIG. 1A.

Axilla splint (applied).

FIG. 1C.

Axilla splint, with forearm band (applied).

FIG. 2.

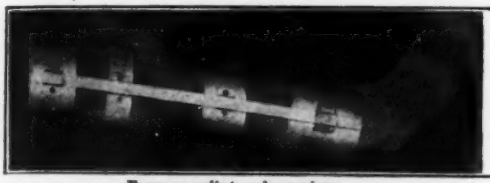


Forearm splint (straight).

As will be seen, this type of splint can be made or adjusted to any position of a compound fracture, and admits of easy access to the wounds without removal of the splint, thereby adding materially to the comfort of the patient and maintaining the immobility of the fragments; it also diminishes considerably the time in dressing a case as there are no bandages to take off or put on.

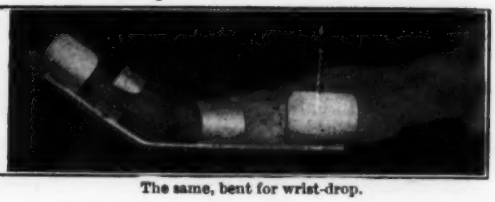
The leg splints (Figs. 4 and 8) have no pressure points, doing away with the possibility of heel

FIG. 2A.



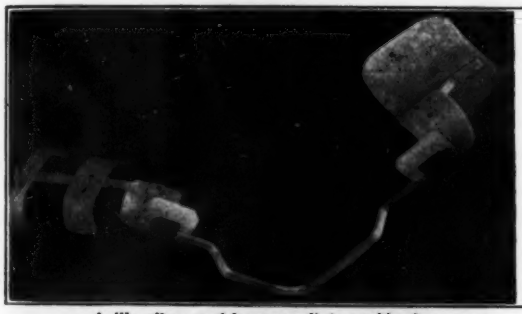
Forearm splint, palmar view.

FIG. 2B.



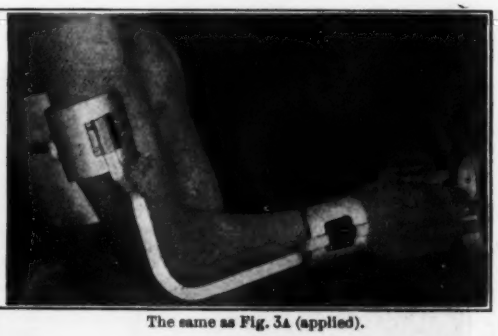
The same, bent for wrist-drop.

FIG. 3A.



Axilla, elbow, and forearm splints combined.

FIG. 3B.



The same as Fig. 3A (applied).

FIG. 3C.

Elbow and forearm splints combined.

FIG. 3D.

The same (applied).

FIG. 3E.

Axilla and forearm splints specially made.

FIG. 3F.

The same applied, showing stay of aluminium.

FIG. 4.

Short leg splint, padded and applied.

FIG. 5.

Leg splint, padded, with heel stand.

FIG. 7.

Long leg splint.

FIG. 8.

Long leg splint (applied).

FIG. 9.

Splint made for case with contraction of knee and foot-drop.

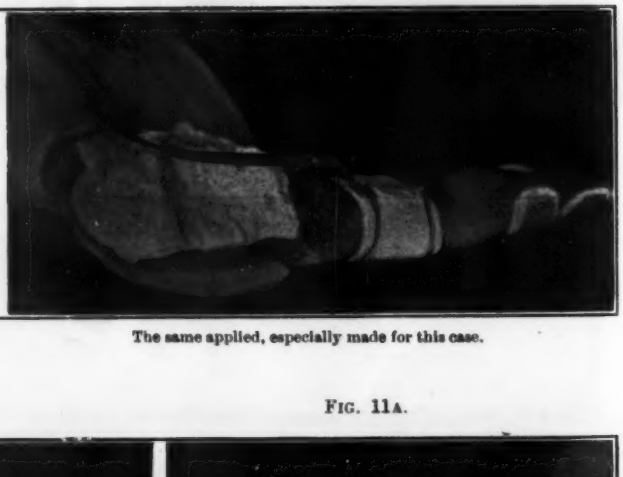
FIG. 9A.

The same as Fig. 9 (applied).

FIG. 10.

Elbow and forearm splint with shelf.

FIG. 10A.



The same applied, especially made for this case.

FIG. 11.

Another combination of elbow.

FIG. 11A.

The same, but with elbow bar raised.

sores. I find the most satisfactory way to arrange a leg with one of these splints on is to suspend it a couple of inches above the bed by a turn of a bandage to the top of a cradle, and, if it is necessary, the limb can be steadied by two or three sand-bags, or a broad band of iron can be riveted at right angles to the bottom of the heel curve (Fig. 5).

The axilla splint shown in Figs. 1 and 1B I have found most satisfactory for fractures of the upper portion of the humerus, ensuring absolute immobility, and is most comfortable for the patient. It is made with two pieces of galvanised sheet iron moulded to the thoracic wall and humerus, both

FIG. 6.

Leg splint, showing how to fix the limb.

are in contact at the upper end and separated at the lower end by a stay of the same material riveted on to each piece. The splint is kept in position by two strips of adhesive plaster carried around the thoracic plate and over the chest wall a couple of inches across the sternum in front and the spine behind; if there is a wound internally two bands can be employed instead of a humerus plate. In the elbow splint (Figs. 3B and D) the bar is raised from each plate at least 1½ inches, and is always placed externally, for if it is put posteriorly or internally the bar presses on the iliac crest of the patient when sitting or lying down (see Fig. 11A).

The total cost of the splints varies from 1*s.* to 1*s.* 6*d.*

The aluminium bar can be purchased from the London Aluminium Company, 26, Tabernacle-street, E.C., in large quantities at 1*s.* 9*d.* per lb. or in a small quantity at 2*s.* per lb. The bars are sold in lengths of 12 feet; it is more convenient to have them cut in lengths of 4 feet. The galvanised iron sheeting, 22 gauge, costs 1½*d.* per pound.

Princes-gardens, S.W.

UNDER the will of the late Mr. Eno, of fruit salt fame, the following bequests are made: £50,000 to Guy's Hospital, as to £25,000 for general purposes, and as to £25,000 for the re-endowment fund; £40,000 to the Royal Victoria Infirmary, Newcastle-upon-Tyne; £20,000 to the London Lock Hospital and Rescue Home; £10,000 to Dr. Barnardo's Homes; and £10,000 to the Central Committee of Discharged Prisoners' Aid Societies.

ROYAL DEVON AND EXETER HOSPITAL.—At the last meeting of the court of governors of this hospital it was unanimously resolved to appoint Dr. J. Delpratt Harris consulting surgeon to the hospital and also an honorary life governor in recognition of his valuable services to the institution. The chairman, Mr. W. B. Heberden, C.B., in alluding to Dr. Harris's good work for the charity, stated that he joined the medical staff in 1881 and for the past ten years had been in charge of the electrical department, which had been founded by the generosity of Mrs. Sanders, of Stoke House.

DIRECT HÆMOLYSIS:

A TEST FOR BACTERIAL TOXINS AND FOR ESTIMATION OF DOSAGE IN VACCINE THERAPY.

BY H. LYON SMITH, M.D. DURH.

CLINICAL NOTES OF CASES TREATED BY INOCULATION SUGGESTED BY DIRECT HÆMOLYSIS,

BY A. CASSELS BROWN, M.D. EDIN.

WHEN blood corpuscles, washed free from fibrin and serum, are brought into contact with emulsions of bacteria with which the blood has been previously sensitised, as a result of acute or chronic infection, hæmolysis occurs. It is conceivable that this *in vitro* result is a reproduction in miniature of that which actually occurs *in vivo;* varying in degrees of destruction from massive explosions in hæmophilia to the minor anæmias induced by slight infections. The evidence in support of the statement is obtained from a series of experiments begun in November, 1914. Of 180 cases which have been investigated in this way, a large proportion have been of chronic arthritic types. The remainder has been made up from various catarrhal conditions, nerve affections, cutaneous and glandular lesions, and a few cases of acute pulmonary affections.

Already nearly 400 varieties of organisms have been described in various text-books of clinical bacteriology as actual agents or associates in the production of disease. Though it may be a reasonable assumption that the most prominent bacterium in a freshly examined exudate is the real offender, it not infrequently happens that the true causes may escape detection in the fresh films and in the culture tubes. It is often asserted that an autogenous vaccine is essential to successful vaccine therapy, and if an autogenous vaccine is unsuccessful it is concluded that the resources of vaccine therapy have been exhausted. In reality, what has been done has been simply to inject emulsions of the organisms which happen to be present in the exudate and grow freely in the cultures. There has been no sort of control in the way of analysis of the blood which might have shown up other details of the picture. Diagnosis by serum tests is available for some of the more prominent pathogenic organisms. These tests, which include the opsonic index, agglutinations, precipitin tests, and deviation of complement, do not lend themselves readily to a comprehensive and rapid search for bacterial toxins.

Who can point to a single disease in which the action of bacteria can be entirely excluded? It behoves us, therefore, to search diligently for better method in the detection of bacterial ferments, especially in those internal disorders of obscure origin where cultural methods are not applicable.

So far as I know, no one has hitherto published any experimental work upon the reactions to bacterial emulsions of the patient's own red corpuscles, although Spengler, in his work on tuberculosis, has stated that the erythrocytes carry infinitely more "substance sensibilisatrice" than any other element of the blood. The technique of direct hæmolysis, briefly described in the ensuing paragraphs, is very simple when compared with the accepted methods of sero-diagnosis. Fallacies, from accidental variations of surface tension or the liability of red blood corpuscles to

undergo spontaneous lysis, must always be suspected and keep us from jumping to hasty conclusions.

Minute test tubules, measuring 30 mm. by 3 mm. in diameter, are arranged in a small tray of plasticine and carefully numbered. Into each of these 0·1 c.c. of a 5 per cent. emulsion of blood corpuscles is placed. The next stage consists in adding to each of these tubules 0·1 c.c. of bacterial emulsion (e.g., "stock" vaccine), a list of those proposed to be used for the trial having been previously decided upon. A roll of plasticine is placed upon the tubes to prevent contamination and evaporation and the tray put in an incubator at 37° C. for ten minutes. Inspection is then made, and it will usually be found that in one or more of these tubules hæmolysis has occurred. A note is made of the number or numbers of the tubules which show reaction, and the tray is returned to the incubator. It is advisable to make two or three examinations in this way in the first 60 minutes and to note the times at which hæmolysis takes place. In a control tube, instead of bacterial emulsion 0·1 c.c. of carbolised normal saline, such as is used in preparing most vaccines, is introduced. Some bloods, especially those taken from very septic conditions, exhibit hæmolysis earlier or later in this tubule, whereas in bloods taken from fairly healthy people the corpuscles in this tubule sediment unbroken. This control tubule serves as a useful guide to the salt contents of the blood; bloods that are deficient in calcium and magnesium salts hæmolyse somewhat readily in normal saline. The control tubule is also an indicator as to whether the hæmolytic changes in the bacterial tubules can be depended upon. Those which precede by several minutes the changes in the control tubule may be accepted as positive; those in which hæmolysis follows upon the control should be regarded with suspicion.

Is the hæmolysis present in some tubules due to some inherent property in the bacteria? We know that certain pathogenic bacteria, when grown on blood media, produce colonies with hæmolytic halos. If the results in this test were dependent upon such inherent properties of the bacteria, then one would expect these groups to produce the same results with all bloods; but on investigating a series of bloods it will be found that variations occur. With some bloods these "hæmolytic" strains do not produce direct hæmolysis, and, on the other hand, emulsions of certain bacteria not usually prone to form hæmolysing colonies on blood medium are found to produce, in certain cases, rapid hæmolysis. These results seem to point to a definite reaction between the toxins of the bacteria employed and some "substance sensibilisatrice" in the corpuscles of individuals previously sensitised by infection, acute or chronic, with the same organisms.

In applying direct hæmolysis to clinical purposes it becomes necessary to select from one's collection of bacterial emulsions ("stock" vaccines) those organisms which are most likely to be concerned, including in the number as many representatives as possible. This selection can only be made effectively by careful study of the properties of various bacteria. Some of them are protean in their pathogenic properties.

Having then selected a list, which may vary from 15 to 25, and obtained positive results in a certain number of these, the second part of the test, which aims at a quantitative estimate of the sensibility of the blood, is carried out. This consists in making a series of dilutions of the original bacterial emulsions, using 1/2, 1/4, 1/8, 1/16, 1/32, or more. The dilutions are made by setting up a row of five or six of the test tubules in plasticine trays. In each tubule 0·1 c.c. of normal saline is introduced. In the left hand tubule 0·1 c.c. of the bacterial emulsion is inserted and mixed thoroughly by drawing up and down into the syringe or pipette. One-half of the contents of this tubule is withdrawn and inserted into No. 2, mixed as before, and half of this transferred to No. 3, and so on, to the end of the series, half of the contents of the last tubule being thrown away. To each of these tubules 0·1 c.c. of the blood emulsion under investigation is introduced. These trays are then placed in the incubator as before and allowed to remain at 37° for an hour, then withdrawn and allowed to sediment at room temperature for an hour or two. At the end of that time it will be found that in the tubules showing no reaction at all the blood corpuscles will have settled down uninjured, whereas in the others a greater or less degree of hæmolysis will have occurred. It should be noted in which tubule all trace of hæmolysis ceases, for this is the indicator in the determination of dosage, and initial inoculations should be set well below this strength. Although quite large quantities of vaccine may be given to patients who do not happen to be infected with that organism, much greater caution is necessary where we are dealing with the correct antigen, and I believe that this principle of direct hæmolysis explains the very disagreeable result which sometimes follow the use of a dose which has been greatly in excess of the patient's power of response. The "law of averages" is an unreliable guide to the use of bacterial vaccines in established infections, and yet, for want of more definite measurements, it has had to serve us.

That most maladies are due to mixed infections is an axiom which is now accepted by many pathologists. Although one organism—e.g., B. diphtheriæ, B. tuberculosis, or B. typhosus—may be the primary cause, it is the secondary infections which so often add dangerous complications. Our means for ascertaining the values of these factors are still very meagre, and therefore no clues should be lightly rejected which might indicate, even in the slightest degree, not only the quality, but some measure of the quantity of the toxic elements in a given case.

Details of the technique employed in direct hæmolysis are as follows.

1. *Preparation of the blood emulsions.*—The blood should be taken from a vein, the median cephalic, or where the veins are hidden, as in children or in arthritic cases, the internal saphenous vein which can be made prominent by hot fomentation and bandaging. The skin being sterilised, a sterilised hypodermic syringe having a capacity of at least 2 c.c. is used to draw off 2 or 3 c.c. of blood and this is at once injected into a tube containing hypertonic citrated saltsolution. Allen and Hanburys make a very convenient little apparatus, "Hyposol" vacuum extractor, for taking blood samples, and have adapted it to my purpose by introducing 1 c.c. of the following solution: sodium chloride, 0·69; sodium citrate, 1; distilled water to 100. This solution will keep the corpuscles in most cases intact for 24 hours, sometimes even longer.

The blood is centrifuged at high speed for four minutes, observations being then made of the

character of the supernatant fluid (often very dark in septic cases) and of the thickness of the layer of leucocytes resting on the mass of red corpuscles. The supernatant fluid is carefully removed with a pipette fitted with a large teat. Fresh normal saline is added to the deposit of corpuscles, which are then shaken up well to remove all traces of serum and citrate, and again centrifuged for four minutes. The supernatant fluid is again removed with the pipette, and sufficient normal saline is added to the corpuscles to make a 5 per cent. emulsion by volume.

2. The blood of a person who has been infected by an organism contains elements (antitropic) which have specific chemical affinity for the toxins of that particular organism. It is well known that the toxins of certain bacteria are not readily soluble, but by prolonged maceration the bodies of most bacteria undergo some dissociation, and, for the purposes of this test, freshly made emulsions are less suitable than those which have been kept for some time. Most of the vaccines which I use have been prepared according to the methods adopted in Sir Almroth Wright's Clinique, the only modifications I employ being: (1) heating the freshly made emulsions for one hour at 56° on three successive days; (2) the introduction into the original stock emulsion of 1 per cent. tinct. iodi B.P., the tube being then allowed to remain in the incubator for 24 hours at 37°.

A complete list of antigens would embody all the organisms ever known to have been associated with morbid processes. Limiting myself to the more common varieties, the following forms a useful series for stock tests, but each worker in the field of bacteriological research would probably be able to point out important omissions. Many of the vaccines are polyvalent, and not a few of them are named from the principal organism present. For instance, many vaccines of B. influenzæ and M. catarrhalis contain a certain proportion of streptococci which it has not been convenient to entirely eliminate in the preparation.

1. Staphylococci. It is well to have various strains, taken from cutaneous lesions, arthritic cases, and from catarrhal sources.
2. Streptococci. (*a*) Pyogenes, (*b*) Brevis, (*c*) Longus, (*d*) Viridans, (*e*) Fecalis, (*f*) Mucosus, (*g*) Parodontal.
3. Pneumococci.
4. M. catarrhalis. (From catarrhal strains and the similar organism often found in pyorrhœa alveolaris.)
5. B. influenzæ.
6. B. coli.
7. B. typhosus.
8. B. paratyphosus (A and B).
9. B. proteus hominis.
10. B. pyocaneus.
11. M. tetragenus.
12. B. septus v. coryzæ.
13. T.B.E.
14. Gonococcus.
15. Meningococcus.
16. B. pseudodiphtheroid.
17. B. diphtheriæ.
18. M. deformans (Warren Crowe).
19. B. xerosis.
20. B. du rhinosclerome.
21. B. mucosus capsulat. (Friedländer).
22. B. enteritidis.
23. Sarcinæ.
24. Streptothrix.
25. Luetin.

3. I found a 1 c.c. syringe, graduated in tenths, more convenient than a pipette and teat for dividing out the blood into the test tubules and also for mixing the antigen with the blood. The rubber-capped bottles of vaccines are well shaken, their tops smeared with a thin layer of cresol, and they should be carefully arranged in a row in the same order as the numbered list previously drawn up after considering all the possible or probable bacterial causes in the case under investigation.

After drawing 0·1 c.c. of No. 1 with the sterile syringe and injecting this into tubule No. 1 (which already contains 0·1 c.c. of the 5 per cent. blood emulsion), the syringe is cleansed by drawing up into it, first, a little alcohol to wash out the previous antigen and, secondly, with a little sterile normal saline to wash out the alcohol. Into one of the tubules of blood 0·1 c.c. of normal saline containing 0·5 per cent. phenol is introduced. At the end of an hour, or possibly two hours, for hæmolysis may be retarded if there is a very weak infection or if some of the antigens happen to have been freshly made, the numbers of the tubules which give positive results are noted and a list made. Small plasticine trays with rows of four, five, or six tubules are prepared, the name of patient and antigen being written in the plasticine with a needle. Latterly I have found four a convenient number, as it is rare to get a positive reaction in a dilution below one-sixteenth of the strength of the original antigen. In each tubule place 0·1 c.c. normal saline. Then add to the left-hand tubule of each row 0·1 c.c. of the antigen named. Mix by drawing up into the syringe three times. Transfer one-half of the mixture into the next tubule and repeat the process up to the last tubule, and throw away half of this dilution, so that each tubule still contains exactly 0·1 c.c. Shake up the blood emulsion and inject 0·1 c.c. of it into each of the dilutions of all those which have been selected for quantitative tests. Put these trays into the incubator for an hour, then remove them and let them have two or three hours to undergo sedimentation at room temperature. Read off and note the strength of the weakest dilution which shows the least trace of hæmolysis. The initial dose of the vaccine should be well below this figure, and in cases of very acute infections it is advisable to begin with a dilution of one-tenth, or even one-twentieth, in order to avoid the risk of anaphylaxis or of excessive reactions.

Clinical Notes of Cases Treated by Inoculations Suggested by Direct Hæmolysis, by A. CASSELS BROWN, M.D. Edin.

CASE 1. *Rheumatoid arthritis.*—The patient, a female aged 44, seen in September, 1914, was suffering from a sharp "influenzal" attack which lasted for two weeks. For some two years previous to this illness the patient had had occasional "rheumatic" complaints which yielded more or less readily to treatment by salicylates. The patient recovered sufficiently to resume her teaching about the beginning of October, and was able to remain in school until nearly the end of the month. When seen at this period of her illness the patient gave a fairly characteristic appearance of early rheumatoid arthritis. There was much anæmia, a quick pulse, a temperature which rose in the evenings to about 100° F., and a history of insomnia and both arthritic and muscular pain, which at times appeared to be quite lancinating in character.

On examination she was found to be emaciated, with considerable atrophy of muscles and swelling and stiffness of many joints. The parts most affected were the metacarpal phalangeal joints of the first two fingers of either hand, the wrist-joints, the knee-joints, and the ankle-joints. Later the elbows and the shoulders became infected also and, to a less degree, the neck. Anorexia was persistently present from the first. The heart and lungs showed no abnormalities. Through November the patient got steadily worse and, in spite of vigorous treatment, the stiffness, the swelling, and the pain seemed to get the upper hand more and more as each week passed by. To make matters worse, a troublesome sore-throat developed in December which resisted all treatment and, at the beginning of the year, an acute laryngitis deprived the patient entirely of her voice.

For six weeks she was treated by a polyvalent rheumatic vaccine, which, however, appeared to give but transient

relief. On Jan. 13th a specimen of her blood was taken in one of Messrs. Allen and Hanburys' vacuum tubes and despatched to Dr. Lyon Smith. On the 19th the first dose of the "antigen" he sent down was administered hypodermically. 1 c.c. of the antigen contained staphylococci 125 millions, streptobacilli (sensitised) 75 millions, micrococcus deformans 0·3 million, bacillus mucosus capsulatus 200 millions, bacillus influenzæ 75 millions. The initial dose given was 0·4 c.c., and this was increased by 0·1 c.c. every fourth day until the full amount of 1 c.c. was reached. There was a well-marked reaction about six or eight hours after the injections, especially in the case of the early inoculations. The temperature rose to about 100° and there was always a decided exacerbation of pain. There was no local reaction to be seen. After three doses the patient felt well enough to be carried through to another room, and from this time onwards made steady progress towards recovery. On March 17th, on which day she was given her fifteenth injection, she was able to walk downstairs, and was well enough to go to the country for three weeks at Easter. Dr. Lyon Smith increased the dose of the antigen about this date as follows: 1 c.c. = micrococcus deformans 0·6 million, staphylococci (sensitised) 250 millions, streptobacilli (sensitised) 100 millions, bacillus mucosus capsulatus 250 millions, bacillus influenzæ 80 millions, micrococcus catarrhalis 80 millions. 1 c.c. of this was administered once a week for four doses, 1 c.c. every tenth day for four doses, and at the date of writing (June 18th) she is having 1 c.c. once a fortnight.

The patient's present condition is as follows. Most of the pain and swelling and stiffness of the joints has disappeared. The laryngitis and the sore-throat cleared up almost immediately. Sleep has returned and appetite has improved. Weight to the amount of 10 lb. has been gained, and the muscles are far less flabby than they were. The anæmia has vanished and the patient has developed a good healthy colour. She has been teaching in school all the summer term.

CASE 2. *Duodenal ulcer.*—The patient was a national reservist aged 33, who was seen on Jan. 12th, 1915, when he gave the following history. During September, 1914, while doing duty at Queensferry, he had developed a bad cold, which was very persistent, in spite of treatment. Early in October he noticed that some two or three hours after eating he began to suffer from digestive disturbances—slight pain, which occasionally was accompanied by actual vomiting. He then saw a doctor, who treated him for gastric catarrh. On Nov. 19th he was sent to Barrow-in-Furness and there grew gradually worse, until he was compelled to go to hospital on Dec. 18th. While in hospital his case was definitely diagnosed as duodenal ulcer, and he was treated by rest in bed and a milk diet. This course of treatment was so far successful that he was discharged from hospital free from pain on Jan. 11th and given a week's leave to recuperate. On Jan. 12th he came to consult me, saying that, as the result of having taken a rather more generous meal than he had been accustomed to, his symptoms had all returned worse than ever. He stated that the pain became very intense about three hours after eating and that it was invariably relieved by taking another meal. He looked terribly thin—his weight had fallen to 7 st. 12 lb., and upon palpation of the abdomen I found definite tenderness about the region of the duodenum or pylorus. I could get no evidence of melæna.

I strongly urged him to consult a surgeon with a view to operation, but could not get him to consent to any such procedure. I then determined to try a course of antigen treatment, as I considered that it was hardly likely that as yet there could be any structural changes in the lumen of the gut. He went to bed on the 15th and was ordered a diet of milk and water. I took a specimen of his blood and received the following antigen from Dr. Lyon Smith on the 22nd: 1 c.c. = staphylococcus albus et aureus 250 millions, sensitised streptococci 50 millions, pneumococci 50 millions. I began with 0·3 c.c. of this and increased by 0·1 c.c. every other day until the full dose of 1 c.c. was reached. There was never at any time any marked local or general reaction after inoculation. At the same time I added one raw egg per diem and raw beef-juice to his diet. From this time onwards he began to improve rapidly and in three weeks he was allowed three raw eggs and some steamed white fish daily. On Feb. 7th Dr. Lyon Smith strengthened the original vaccine, and of this he received an inoculation of 1 c.c. every four or five days until the beginning of April. He was allowed up on Feb. 21st and I added cold boiled ham, underdone meat, and vegetables to his dietary. On March 10th he was able to resume his civilian duties—I had in the meantime recommended him to obtain his discharge from His Majesty's forces—and by the end of the month he was enjoying an absolutely full diet. Since then he has been having an inoculation every fortnight, and I have suggested that he should keep this up for some months to come. I weighed him about two weeks ago and found that he turned the scale at 9 st. 2 lb., and he is now (June 20th) wondering whether it is not his duty to try for a commission in the army.

CASE 3. *Septic bronchitis, pleurisy, and pneumonia.*—The patient, a boy aged 10, was seen on April 17th, when he was found to be suffering from what I looked upon as a septic tonsillitis. History given was that he had caught a cold on his way home from school two days previously. There was a quickened pulse, a slightly elevated evening temperature, and a good deal of hard cough, with some muco-purulent expectoration. On auscultation of the lungs there was a certain amount of bronchial catarrh noticeable, which more particularly affected the right lung. There were also slight enlargement and tenderness of the cervical glands on both sides. He was treated by various antiseptic applications to the throat, and given a mild febrifuge and expectorant mixture. No improvement followed this treatment, and on the 22nd it was found that the scattered exudations on the tonsils had coalesced, giving an appearance uncommonly like diphtheria. I took a swab from the throat and sent it off for examination, and gave 2000 units of diphtheria antitoxin without delay. On the 23rd I repeated this dose as the condition of the fauces seemed much the same, and on the 24th I found that the exudation had completely disappeared. It is interesting to note that the bacteriological report which arrived that morning contained the intelligence that no diphtheria bacilli were to be found. On the 25th the boy seemed worse instead of better, and I found a patch of broncho-pneumonia at the base of the right lung. The purulent expectoration had very much increased by this time, and the bronchial tubes at the base, especially of the right lung, were dilated and choked with secretion. Dr. Percy Marsh, of Liverpool, saw the boy with me on the 26th. A diagnosis of septic bronchitis, broncho-pneumonia, and pleurisy was made, and Dr. Marsh concurred with me in recommending a vaccine immediately, as the boy was by now very gravely ill. A tube of blood was taken and sent to Dr. Lyon Smith on the same day, and he sent an antigen, of which the first dose was given on the 30th. 1 c.c. of this contained sensitised streptobacilli 20 millions, sensitised staphylococci 100 millions, bacillus coli 5 millions, micrococcus catarrhalis 10 millions, sensitised pneumococci 30 millions, bacillus septus 20 millions. I injected 0·1 c.c. and had a very marked reaction about 36 hours later on, the temperature mounting very suddenly to 104·6° F. This rise of temperature was accompanied by the most copious expectoration and a certain amount of fluttering of the pulse. The patient was ordered ½ oz. of port wine every four hours and was given frequent inhalations of oxygen. He was also sponged down with tepid water. On May 2nd I repeated the same inoculation as before, and had again the same marked reaction. On the 4th I decided to decrease the dose, giving half the quantity only. This time there was no reaction, delayed or otherwise, and the patient was beginning to look and feel much better. On the 6th I gave the same dose and had the same result. There were definite reactions after the inoculations on the 8th and 10th which occurred 24 hours after the treatment. On these occasions the temperature rose to 102°, and there was the same copious expectoration as before. After this, though I carefully increased the amount of antigen at gradually lengthening intervals of time, the temperature never but once rose as high as 100°. There has been a long and tedious convalescence, but about three weeks ago we were able to carry the boy out to a shelter which had been erected for him in the garden, and he is now (June 20th) beginning to walk about.

CASE 4. *Acne vulgaris.*—The patient, an unmarried woman aged 27, consulted me early in April last. She stated that in October, 1913, she had suffered from an abscess in the antrum of Highmore, which was opened and drained in the usual manner. Shortly after this she noticed that she began to feel not quite up to the mark and also that

numerous acne spots had developed, particularly upon the chin. From the chin the condition spread to the cheeks and the forehead, and when I saw her the whole of her face was covered with the characteristic pustular eruption in every stage of development. She was markedly anæmic and always felt very tired. She had lost weight and only turned the scale at 8 st. 5 lb. She mentioned that she had frequently suffered from sore throat during the period under notice. I sent a specimen of her blood to Dr. Lyon Smith, who forwarded a bottle of antigen, of which 1 c.c. contained the following ingredients: streptobacilli 75 millions, micrococcus catarrhalis 30 millions, sensitised pneumococci 50 millions, bacillus coli 50 millions, staphylococci 500 millions, pseudodiphtheria bacillus 30 millions, bacillus proteus 10 millions, polyvalent rheumatic vaccine 130 millions, acne bacilli 6 millions. The following directions were given and have been carried out: "Begin with 0·2 c.c. Inoculate every other day, increasing by 0·1 c.c. When the dose reaches 0·5 c.c. increase intervals to every fourth day. When 1 c.c. is reached every fifth day for four doses. Then once a week."

The first dose was administered on April 11th, and by the end of the month a gradual improvement was noticed. At the time of writing (June 24th) the gain in every way is most marked. The face is practically free from acne, even the most indurated spots having disappeared, the anæmia has disappeared, the weight has advanced from 8 st. 5 lb. to 9 st. 2 lb., and the patient feels better than she ever has in her life.

THE RELATION OF VENTRICULAR FIBRILLATION TO CLINICAL CHLOROFORM SYNCOPE.[1]

BY E. H. EMBLEY, M.D. MELB.,
SENIOR ANÆSTHETIST TO THE MELBOURNE HOSPITAL, AUSTRALIA.

SINCE McWilliam in the *British Medical Journal* of 1889 drew attention to ventricular fibrillation as a form of sudden circulatory failure and death, very little had been done in this line of research until Dr. Goodman Levy investigated its occurrence in relation with chloroform and adrenalin as communicated in the *Journal of Physiology* of 1911. Since that time Levy has contributed a lot of valuable data on the subject.

It is a circumstance of much significance that those experimental physiologists who have worked with dogs in the elucidation of clinical problems should have reported no observations upon the occurrence of ventricular fibrillation. Neither is this owing to any experimental difficulties in eliciting the phenomenon nor of interpreting it when it happens, since it is readily recognisable and may be frequently observed in the laboratory when cats are used for experimentation under chloroform. I have found it to occur during the administration of chloroform to three out of five successive cats, whilst out of several hundred successive dogs, in which death has been caused designedly by chloroform under a great variety of conditions, I have never observed it except as a terminal process when the blood pressure has fallen very low from shock or some other cause—quite a distinct event from that form of fatal syncope in cats.

There is no doubt as to the occurrence of ventricular fibrillation in cats during the administration of chloroform. There is also no doubt about the absence or extreme rarity of its occurrence in dogs under chloroform. Owing to this circumstance the employment of data obtained from cats in this relation ought to be very guarded in the interpretation of clinical phenomena. Levy, however, contends that the analogy between this form of death in the cat and the clinical form of chloroform syncope is so close as to warrant the assumption of a common causation. McWilliam qualifies a like contention.

Both McWilliam and Levy refer to the frequency of occurrence of syncope due to ventricular fibrillation in cats, both during induction and re-induction of chloroform anæsthesia. McWilliam, more than Levy, finds it occur on re-induction at any period during chloroformisation. McWilliam also contends for an abnormal condition of the circulation, &c., as a necessary factor in addition to chloroform. This does not appear to be Levy's experience, and it certainly has not been mine. Levy has extensively investigated the conditions supplementing the chloroform factor.

A characteristic of the circulatory apparatus of the cat is the readiness with which changes occur in the cardiac rhythm under the reflex stimulus of various forms of afferent nervous impulse. Vagus efferent cardiac impulses are inhibited and those of the accelerator substituted, the normal rhythm of 120 or so beats to the minute suddenly changing to one of 350 or so beats to the minute. When the sensory impulses arise from the mucous membrane of the respiratory tract, as when weak ammonia, oil of mustard, or chloroform vapour is inspired, a marked difference is noticeable in the regularity of the heart's rhythm between that occasioned by chloroform and that by the other substances. The accelerator rhythm with chloroform is markedly intermittent, whereas that with ammonia and other irritants is practically free from intermissions. This intermittent feature is a very important peculiarity of chloroform action. It occurs before anæsthesia sets in, and during its period of incidence ventricular fibrillation may occur. The intermissions appear to be due in part to temporary periods of ventricular fibrillation and in part to the temporary return of vagus innervation arising from exaltation of excitability of this nerve by the chloroform. This latter irregularity is cut out by atropine. If during the period of irregular cardiac action ventricular fibrillation does not set in narcosis deepens and anæsthesia comes on. With the onset of anæsthesia the afferent impulses cease. This circumstance, together with the exaltation of vagus excitability by the chloroform, restores vagus control of the heart's rhythm. This restoration of vagus rhythm is indicated usually by the sudden change from the rapid accelerator to the slower or normal rhythm. Fibrillation does not now occur. The tonic systolic contractions of the vagal rhythm have a decided influence in checking incoördinate muscular contractions of the ventricles. There is uniformity in the experimental observations upon this point.

This series of events occurs again and again in re-inductions of the anæsthesia unless permanent ventricular fibrillation sets in. Vagal excitability in the cat does not become depressed by induction of chloroform anæsthesia as in the dog. This doubtless is due to the excitability of this nerve being raised to great activity in the dog as against relatively feeble activity in the cat.

It is to the fact that fibrillation only occurs in the pre-anæsthetic stage of the administration of chloroform to cats that Levy was led to assert that the danger in clinical administration of chloroform lies in the employment of concentrations that have hitherto been regarded as being within the limits of safety, or otherwise stated, that clinical fatalities do not result from overdosage.

[1] Read before the meeting of the American Association of Anæsthetists, San Francisco, June 21st, 1915.

There is a striking discordancy between this picture of circulatory disturbances in the induction of chloroform anæsthesia in the cat and that of the dog. Some intermissions in heart beat occur during the pre-anæsthetic struggling of the dog. These are preventable by atropine or vagotomy. There appear to be no temporary onsets of ventricular fibrillation. When prolonged or permanent inhibition of the heart sets in it occurs at the end of induction, or in the case of morphinised dogs somewhat later. This is a common occurrence and one of the most striking phenomena of chloroform narcosis in the dog. Chloroform syncope in dogs appears to be of the vagal type only. The syncope of the dog is not merely due to inhibition of the heart by the vagi. The vaso-constrictor mechanism is coördinately inhibited. This syncope arises as a consequence of a high tension of chloroform in the *arterial blood* exalting the excitability of the vagus and vaso-dilator mechanisms and at the same time depressing that of the myocardium.

It is not easy to kill a vagotomised dog with chloroform and it is probable that no clinical fatalities arise as a consequence of a general high tension of chloroform throughout the entire blood mass and tissues of the body. Such a tension is relatively slowly brought about and the progress of general circulatory and medullary depression corresponds. Respiratory cessation occurs and with it cessation of further intake of chloroform. Artificial respiration thereupon lowers the tension of chloroform in the system to a level consistent with the resumption of respiratory activity. There is plenty of warning of this oncoming.

Syncope from cardio-vascular inhibition is a result of the sudden intake of excessive concentrations of chloroform vapour during normal respiration or of excessive respiratory intake of concentrations not otherwise too high. It does not occur from a normal respiratory intake of concentrations of 2 per cent. or less. Over this limit syncope is apt to occur, and with a frequency which increases with the increase in concentration. The probability of recovery from this cardio-vascular form of syncope depends upon the degree of myocardial depression which the dog's heart has suffered before the incidence of inhibition. It is essentially the result of overdose.

With regard to overdose Levy appears to have failed to recognise the distinction between an excessive tension of chloroform in the arterial blood and an excessive tension throughout the entire blood mass and tissues of the body as above described. The sudden rise in tension in the arterial blood is similar to that which results from the injection of three drops of chloroform (diluted) at once into the external jugular vein in continuity. Such a dog dies, or very nearly dies, and from overdose. Hence Levy errs in contending that pre-anæsthetic syncope cannot be due to overdose, and his interpretations of the causes of death in 76 clinical fatalities from chloroform, as given in the Proceedings of the Royal Society of Medicine, vol. vii., 1914, correspond.

My own experiments with cats in chloroform narcosis indicate that fully established ventricular fibrillation is fatal. Neither rhythmic heart massage nor any other measure has any effect upon it. Short periods of imperfect fibrillation recover spontaneously. I cannot comment upon McWilliam's case of recovery after an hour of heart massage and the use of pilocarpine.

Whether we are to conclude that ventricular fibrillation or cardio-vascular inhibition is the cause of clinical chloroform syncope will have to rest with the weighing of respective approximate analogies. These analogies are set forth as follows:—

1. Syncope from cardio-vascular inhibition in dogs occurs only in the period of induction. This is the period of incidence of clinical chloroform syncope. That of ventricular fibrillation in the cat may occur at any time in re-induction during a prolonged course of administration.

2. Cardio-vascular syncope from chloroform in the dog is frequently recovered from by artificial respiration, either alone or in conjunction with heart massage. This coincides with the recoveries from syncope in clinical instances. In my experience established syncope from ventricular fibrillation in cats is not recovered from. If it is ever recovered from it must be very rare.

3. The control of the cardiac rhythm in the dog is markedly vagal and approximates in this respect to that of the human. In the cat, on the other hand, marked vagal control is not characteristic, and such control is readily inhibited. As already shown, a heart under vagus control is not prone to ventricular fibrillation, hence, like that of the dog, the human heart should not be liable to ventricular fibrillation.

4. Reflex syncope from cardio-vascular inhibition in dogs under chloroform anæsthesia occurs as readily as that in cats from ventricular fibrillation.

5. Syncopal states occur clinically either reflexly or from overdose, in which the heart does not stop, but the rate becomes very slow. This resembles similar states occurring in the chloroformed dog which are promptly corrected by vagotomy.

This statement appears to me to show a considerable balance of probability in favour of cardio-vascular inhibition as being the cause of clinical chloroform syncope. In view of this, one must regard the protest made by Levy against the exercise of care to prevent overdosage as unwarranted by the data and as a dangerous teaching.

Melbourne.

ROYAL SANITARY INSTITUTE.—The sixtieth course of lectures and demonstrations for sanitary officers will be held at the Parkes Museum, Buckingham Palace-road, from Sept. 20th to Dec. 1st. The course is divided into two parts, the first comprising elementary physics and chemistry, public health statutes, the duties of a sanitary inspector, municipal hygiene and building construction; the second part dealing with meat and food inspection. The fee for Part I. is £2 12*s.* 6*d.* and for Part II. £1 1*s.*, the fee for the complete course being £3 3*s.* The lectures are held on Mondays, Wednesdays, and Fridays at 7 P.M., and the demonstrations at disinfecting stations, dairy premises, waterworks, and so forth, mostly on Saturdays and Wednesdays at about 2.45 P.M. The lecturers include Mr. Wellesley Harris, Dr. W. J. Howarth, and Dr. J. Priestley. Commencing on Oct. 4th at 7 P.M. a series of lectures to assist school teachers and other students, including health visitors, tuberculosis visitors, and school nurses, will be held at the institute, and a fee of £1 1*s.* will be charged for the course, 16 lectures, which will conclude on Nov. 26th. Mondays and Fridays are the lecture days, and the lecturers include Dr. R. Veitch Clark, Dr. Letitia Fairfield, Dr. James Kerr, and Dr. Beresford Kingsford. Special arrangements have been made for each student to attend a course of six infant consultations under the direction of Dr. G. Eric C. Pritchard.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

TRAUMATIC INJURIES TO PHALANGEAL EPIPHYSES.

BY HUGHES REID DAVIES, M.R.C.S., L.R.C.P.LOND.,
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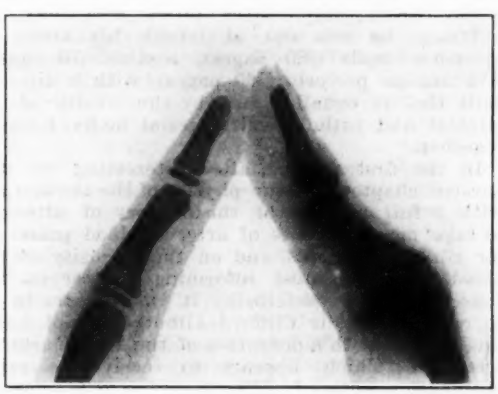
IN an article in THE LANCET of Oct. 31st, 1914, under the heading "Periosteal Whitlow," I drew attention to a case illustrating the marvellous recuperative power of Nature when assisted by art. In this case I wish to draw attention to Nature's evil influence when unassisted by surgical art, and to place this in evidence by exhibiting a radiograph taken on August 11th, 1900.

The finger on the right is the left index finger of an adult, taken 29 years after the injury; that on the left the finger of his young son, taken a few



days after the injury, when he was about eight years of age. The injury to the adult finger was caused by an endeavour in the cricket-field to stop a very "hot" return in the summer of 1871, when the recipient was about 13 years of age. The ball was high over his head; he jumped, and the impact was on the finger-tip—probably causing dislocation of the epiphysis. The son's injury was also a blow, but, fortunately, not so severe, resulting in no dislocation, although, as the radiograph exhibits, there were considerable synovial effusion and swelling. In the adult there was absolutely no treatment. The young, foolish, and ardent cricketer feared supersession and having to retire from the match, as all the members of the team were adults. Therefore concealing his pain and disability he finished the match, though batting later on in the day in considerable agony. Nor did he afterwards consult a surgeon. His folly resulted in a life-long disability. The epiphysis was irretrievably injured and the phalanx length-growth arrested ever since 1871.

The unfortunate owner of the finger, for obvious mechanical reasons, has never been able to flex the joint further than to a right angle. Bony exostosis and hypertrophic thickening of the proximal shaft are clearly shown in the radiograph. All stringed instruments have been taboo; skill at the piano handicapped; and in many acts of surgical deftness, the tying of ligatures, or in digital examinations when *length* of finger is essential, the "folly of youth" has been sadly recalled. But in the son's case, wisdom, born of the father's experience, helped to prevent a second error, for the finger on the left is that of a "county" player and a 'Varsity Cricket Blue.

Distortions of fingers are common enough in the cricket world one well knows, and I think that it behoves us at the present day to exercise care and caution in the treatment of the growing hands of youth when injured, and thus avoid the lamentable condition such as I exhibit in the finger to the right. All doubtful injuries should be immediately radiographed; this to be an invariable precaution.

Woodford, Essex.

CASE OF BRONCHO-PNEUMONIA COMPLICATED BY HEMIPLEGIA.

BY VIVIAN M. MÉTIVIER, M.R.C.S., L.R.C.P.LOND.

THE patient, a girl 1¾ years old, had conjunctivitis and a cough on Feb. 23rd, 1915. There were no signs in the chest. Two days later there were marked signs of bronchitis, and towards the evening of the following day symptoms and signs of broncho-pneumonia were present. From this time onwards the child gradually became worse and between March 3rd and 8th she was in a very critical condition. On Feb. 27th there were symptoms of a troublesome laryngitis.

As to treatment, from the day that broncho-pneumonia was diagnosed a mixture was given every 3 hours containing ammon. carb. gr. iis, tinct. bellad. ♏ iii., pot. citrat. gr. i., syr. aurant. ♏ x., mucilage q.s. It may be noted that ammonium carbonate given with a little mucilage very seldom upsets the stomach. Brandy, ♏ x. in a teaspoonful of water every hour, was also given. As the child became more ill, the cyanosis more marked, the breathing more distressed, the pulse-rate more rapid, and the heart more embarrassed the amount of brandy was increased, until she was having ♏ xv. every ¼ hour. The amount of tincture of belladonna was also increased up to ♏ iv. every 1½ hours. When the pupils were fully dilated the dose was gradually reduced. At any time when the child appeared the least bit better the dose of brandy was reduced. Poulticing the chest with mustard 1 part and flour 3 parts relieved the child a great deal. The poultices were applied every two hours at first, but it was found that a pneumonia jacket, lined with oil silk externally and flannel on the inside, kept up the effect of the poultices so well that it was only necessary to renew them about every 4 to 6 hours. One must be careful with poultices of this kind, for the mustard will blister if the poultice is left on longer than is necessary to produce a general reddening of the skin. The child took her nourishment well, which consisted of milk chiefly, albumen water, bovinine ♏ xv.–♏ xxv. three times a day in milk, and constant sipping of a drink made with black-currant jam. A steam kettle was kept going almost continually until nearly all the bronchitic signs were absent and the laryngitis had cleared up. A mixture of ol. pini sylvestris 1 part, ol. eucalypt. 1 part, and tinct. benzoin. co. 4 parts was used. A teaspoonful of this mixture was added to every pint of water in the steam kettle.

On March 5th weakness of the left side of the face was noticed. At this time the little patient was very restless. On examination her left arm and leg were found to be paralysed, and the reflexes on that side of the body were increased. The

paralysis was flaccid. Oxygen was given at frequent intervals from March 5th, and on the 6th caffein. citrat. gr. ¼ every 1½ hours was added to the ammonium carbonate mixture. By March 8th every area of lung had been more or less involved in the pneumonic process.

By March 10th the patient showed signs of improvement. From this time she made good progress. Poulticing was kept up until the end of March. The bases of both lungs were very slow in clearing up. There were still signs of consolidation at the left base. The child was now given a mixture containing pot. iod. gr. i., ammon. carb. gr. 1½, ammon. chlorid. gr. ii., tr. bellad. ♏ iii., mucilage q.s., syr. aurant. ♏ xv., every three hours.

The patient was still doing well on April 6th, when she developed measles, which was raging at that time in the neighbourhood. From this, however, she made a good recovery, but it retarded the improvement of the lung condition. The arm and leg on the affected side were being rubbed, but there was very little improvement in any way. The leg could be moved a little, and the face muscles were a little stronger, but her fingers and wrist were getting stiff.

The patient is no longer under my care. She is still having massage, and the hemiplegic symptoms are now clearing up wonderfully well. On June 22nd there was still a little facial weakness. The left arm was much stronger and could be raised above the head. The fingers were usually kept flexed, but could be voluntarily extended. The forearm was usually held in a semi-pronated position. The left leg was almost as strong as the right. She could stand and walk and kick vigorously. The limb was quite flaccid. There was a little wasting from disuse.

The cause of the hemiplegia was most likely cerebral thrombosis. Many factors were at work to produce it. The cerebral circulation must have been very much hampered when the illness was at its worst. Owing to the destruction of very large numbers of leucocytes, fibrin-forming bodies would be set free in large numbers. The patient was being fed chiefly on milk, which contains a fair percentage of calcium. The endothelium of the small blood-vessels was liable to be damaged by circulating toxins.

Conclusions.—Small frequent doses of ammonium carbonate and tincture of belladonna are invaluable in broncho-pneumonia, in lobar pneumonia in children and babies, and in pneumonia complicating pertussis. These two drugs are well tolerated by babies and children. They act primarily as respiratory stimulants. Nux vomica is apt to cause convulsions if given in doses large enough to help the respiratory and cardiac mechanisms. Ipecacuanha is useful in the very early stages. It should be avoided generally when there are definite signs and symptoms of pneumonia. Brandy is most useful and may be given in large quantities if given often in small doses. Potassium iodide and ammonium chloride are most effective in getting the bronchitis to clear up and the consolidation to resolve. Oxygen helped a great deal in this case, more so than usual. As prophylaxis against intravascular clotting citrates are indicated. Home-made lemonade should be useful. Milk cannot be replaced. Broncho-pneumonia is highly fatal, and this method of treating a disease which is responsible for the death of a great many youngsters gives good results.

Isleworth.

Reviews and Notices of Books.

Diseases of the Arteries, including Angina Pectoris.

By Sir CLIFFORD ALLBUTT, K.C.B., M.D., F.R.S., Regius Professor of Physic in the University of Cambridge. London: Macmillan and Co. 1915. In two volumes. Vol. I., pp. xiv.–534; Vol. II., pp. vi.–560. Price 30*s.* net.

THE Regius Professor of Physic at Cambridge takes a surpassing interest in diseases of the arteries and the heart; witness the numerous valuable contributions with which he has from time to time enriched the medical literature of these subjects. The two volumes now before us would have been published many months ago but for the war. Happily this delay has done little to impair the completeness with which Sir Clifford Allbutt has dealt with his subject, though, as he points out in his preface, the present period of international stress has interfered with the progress of all scientific work. In the ample space provided by these two volumes he sets out at length his views on arterio-sclerosis (680 pages), aortitis (70 pages), and angina pectoris (330 pages) with a literary skill that is equalled only by the wealth of the clinical and pathological material he has brought together.

In the first volume, after interesting but discursive chapters on the physics of the circulation, with a full account of the history of attempts to take measurements of arterial blood pressures for clinical purposes, and on the viscosity of the blood, comes a most informing chapter on the causes of arterio-sclerosis. It is, perhaps, to be regretted that Sir Clifford Allbutt did not begin this chapter with a definition of the term "arterio-sclerosis," which appears to receive no exact explanation before p. 329. Here "arterio-sclerosis proper" is described as "subintimal hyperplasia with splitting of the internal elastic layer," identical with what in large vessels is called "atheroma," and is named "athero-sclerosis" by Marchand and Aschoff. The chapter on the morbid anatomy of arterio-sclerosis comes afterwards, at the end of the first volume; it is possible that the reader, after having studied with interest 300 pages about the causes of arterio-sclerosis, its occurrence in the kidneys, and its symptoms, without having had placed before him any clear picture of the morbid processes resulting in what the author terms arterio-sclerosis, will wish that this chapter had been put earlier in the book. From the clinical point of view Sir Clifford Allbutt divides arterio-sclerotic patients into two main kinds at least—the hyperpietic (with high blood pressure but no renal disease) and the involutionary or decrescent (p. 495). From the point of view of morbid anatomy he describes athero-sclerosis as a degenerative process (p. 297). He lays stress on the structural design of arteries, comparing them to gun-barrels in some respects, but his view that the metal of all gun-barrels must be twisted and fibrous (p. 458), true enough in the days of Joe Manton, no longer holds good, we understand. He believes (pp. 470–477) that the media of muscular arteries is capable of a pure hypertrophy that would result in a thickening and palpable hardening of the vessel wall, but he clearly excludes such a hypertrophy from his conception of arterio-sclerosis. Yet one is tempted to ask if it would not be better for all practical purposes to

use of the term "arterio-sclerosis" in its natural etymological sense of "arterial hardening" due to any cause whatever, as has quite recently been suggested by Turnbull[1] in a comprehensive study of the arteries, differentiating arterial hypertrophy, atheroma (or athero-sclerosis), medial degeneration, amyloid infiltration, and inflammation as five well-recognisable varieties of arterio-sclerosis. All through his two volumes the author emphasises a fact that is often overlooked even nowadays—namely, that extensive vascular degeneration often occurs without either chronic elevation of the blood pressure or its invariable concomitant, cardiac hypertrophy.

The first three chapters of the second volume deal with cardio-sclerosis, the diagnosis and prognosis of arterio-sclerosis, and the treatment of arterial disease; the author speaks with some reserve on the success with which arterio-sclerotics may be treated with potassium iodide, adding that he is accustomed to leave its ingestion or omission to the patient himself. The next chapter is given to the subject of aortitis; his use of Potain's term "*bruit de tabourka*" for the tympanic aortic second sound heard when the first part of the aorta is diseased has long been familiar to the author's pupils, and it may be added for general information that the tabourka is an Algerian drum made of an earthen pot with a skin stretched over its mouth. The last 330 pages of the volume deal with angina pectoris in a masterly manner, its discrimination from false angina, its symptoms, its alleged connexion with disease of the coronary arteries, its production of death by vagal inhibition of the heart, its diagnosis, prognosis, and treatment. The book ends with an index.

The volumes are admirably got up and printed; *o si sic omnes*, the reader will say, if he comes to them fresh from the struggle of perusing one of the shiny ten-pound medical or surgical manuals of transatlantic origin that are nowadays too common. There are not a few misprints in the names of the many authors quoted. The eminent Viennese, Professor Wenckebach, for example, is habitually docked of his first "c," while von Korányi is favoured with three different spellings (vol. i., pp. 44, 120, 130), of which the second is correct. Of the distinction of Sir Clifford Allbutt's style and of the ease and accuracy with which he has the skill to convey his exact meaning it is unnecessary to speak. These features of his writings will be familiar to all students of current medical literature in this country, who will find in these two volumes a thorough and well-balanced analysis of our knowledge of arterial disease and angina pectoris, written by a practitioner of great experience and insight. Here, as in almost every branch of medicine, the current theories, hypotheses, and speculations far outstrip the facts on which they are founded. Not the least of Sir Clifford Allbutt's qualifications as a writer is the critical acumen with which he separates the sound from the unsound and exposes the false reasoning upon which so many of our medical theoreticians are content to build. We congratulate him upon the mental acuteness and vigour with which he has carried through to a successful end the task he set himself to perform in these two volumes.

[1] Quarterly Journal of Medicine, Oxford, 1915, viii., 201.

Urinary Analysis and Diagnosis by Microscopical and Chemical Examination.

By LOUIS HEITZMANN, M.D. New York. Third revised and enlarged edition. London: Baillière, Tindall, and Cox. 1915. Pp. xx.–345. Price 15*s.* net.

THIS book opens with a short account of the physiology of urinary secretion, which is elementary and didactic, followed by a chapter of general remarks, chiefly devoted to the method of collecting urine for examination. The so-called first part opens with Chapter III., and deals in an adequate manner with the routine examination of urine and the estimation of its various constituents, normal and pathological; and the second part, which begins at p. 81, is devoted to microscopical investigations. In this we are introduced not only to a discussion of the crystalline deposits and foreign bodies usually encountered, but also to a detailed consideration of the cells which may be present, derived from different parts of the urinary tract. In this we find the distinguishing feature of the author's teaching, as he holds that careful measurement of the various epithelial elements enables the microscopist to say with some degree of certainty the exact part of the tract to which they may be referred. The many varieties of casts are described and illustrated in detail, as well as the micro-organisms and other parasites which may occur. Part III. is devoted to microscopical urinary diagnosis, based on the principles laid down in the former sections, and illustrations are given of the microscopical elements present in a number of different pathological conditions affecting the kidney, bladder, and generative organs. A couple of pages are devoted to the determination of the functional efficiency of the kidneys, and a short appendix to apparatus and reagents.

The chapters on microscopical diagnosis are interesting and stimulating, though observers may differ as to the degree of certitude attainable by this means. We could have wished that in the illustrations the author had started with simple conditions and worked up to more complex disorders, instead of illustrating in every case mixed conditions, such as parenchymatous nephritis with cystitis; chronic parenchymatous nephritis and waxy degeneration, along with an acute hæmorrhagic exacerbation, pyelitis and cystitis; sarcoma with cystitis and pyelitis, and so forth; but perhaps by deducting the contents of the later illustrations devoted to conditions of the bladder we could arrive at the features attributable to disease of the kidney alone. The illustrations are from original drawings—a commendable feature—and there is an adequate index.

The Operative Treatment of Chronic Intestinal Stasis.

By Sir W. ARBUTHNOT LANE, Bart., M.S. Lond., F R.C.S. Eng., Senior Surgeon to Guy's Hospital, and Emeritus Surgeon to the Hospital for Sick Children, Great Ormond-street. Third edition. London: James Nisbet and Co. 1915. Pp. 201. Price 10*s.* 6*d.*

THE views which Sir Arbuthnot Lane holds on chronic constipation are so well known, not only in this country, but throughout the civilised world, that there is little need to explain the subject-matter of this book. It will be noticed by those who have seen earlier editions that the title has been changed; formerly it was called the treatment of chronic constipation, while in this edition it is called by the more comprehensive

and more scientific name of chronic intestinal stasis. Those who have not studied Sir Arbuthnot Lane's words in connexion with chronic intestinal stasis are recommended to read this work, for it is always wise to judge a man's position from his own writings rather than from the writings of his opponents. The reader will see that, even if he cannot agree with the author's ideas, they are founded on a sound apprehension of facts which cannot be gainsaid, and though he may feel inclined to think that the ideas have been carried too far, he will recognise that Sir Arbuthnot Lane has done a great service to medicine in insisting on the importance of the results that may follow the absorption of poisons from the alimentary canal.

A valuable chapter is that by Dr. A. C. Jordan, who gives an excellent account of the investigation of chronic intestinal stasis by the X rays. Dr. Nathan Mutch's article on the bacterio-chemistry of the small intestine is also worthy of mention as a brief account of an exceedingly difficult subject. Two chapters by the author on the way in which pressure changes in the skeleton may reveal the labour history of the individual are quite interesting though not very germane to the main subject of the book.

LIBRARY TABLE.

A Guide to and Catalogue of Specimens illustrating the Surgical Anatomy of the Temporal Bone in the Museum of the Royal College of Surgeons of England. By ARTHUR H. CHEATLE, F.R.C.S. Eng. London: Adlard and Son. 1915. Pp. 148. Price 6*d*.—The bones illustrating surgical anatomy are arranged in four series: single bones according to (*a*) age, (*b*) type of interior, (*c*) both bones from the same individual, (*d*) bones illustrating special anatomical facts or procedures. The pathological specimens are in three groups: (*a*) Toynbee's historical collection, (*b*) specimens forming nucleus of a modern collection, (*c*) microscopical sections. A large number of the specimens are from Mr. Cheatle's own collection.

The Annual Charities Register. London: Longmans, Green, and Co. 1915. Pp. cccxxxix.–686. Price 5*s*. net.—As a digest of information respecting legal and voluntary means for the prevention and relief of distress and the improvement of the condition of the poor, this Register is a most useful publication, and the elaborate index makes reference easy. Mr. C. S. Loch, the late secretary to the Council of the Charity Organisation Society, contributes an introduction on How to Help Cases of Distress; and there are articles on various branches of charitable work such as Lunatics, Idiots, and Imbeciles, by Dr. H. Rayner; Inebriety and Inebriates, Tuberculosis and the Tuberculous, and Child Welfare, by Dr. T. N. Kelynack.

JOURNALS.

Malaria e Malattie dei Paesi Caldi. Anno VI. Fasc. III. May–June, 1915. Rome: Via Farini 62.—In this issue Dr. A. Gasbarrini discusses the interesting subject of quinine hæmoglobinuria in malaria. From the result of his investigations he is of opinion that besides the two factors, the malarial toxin and the quinine, which are often present together in the same organism without causing hæmoglobinuria, there is a third factor capable of diminishing the resistive power of the red corpuscles. The nature of this third factor is not easy to define, but he noticed that for some days previous to the attack marked intestinal disturbance due to abnormal putrefactive changes had occurred, which could be overcome by suitable dietary, so that the administration of quinine no longer caused hæmoglobinuria. From a practical point of view, therefore, a careful watch over the intestinal functions is highly desirable in malarial patients who are subject to attacks of hæmoglobinuria following the administration of quinine.—Another article by Dr. S. Maggiore deals with the statistics of infantile malaria in Palermo. He found that the majority of cases occurred in infants at an early age, that the infection rarely assumed the pernicious character seen in adults, and easily passed into a chronic or latent condition.—The epidemic of infective jaundice at Tripoli in 1912 is the subject of a paper by Professor Aldo Messaglia. The attack was characterised by a pre-icteric period of three to six days, during which there were headache, anorexia, epigastric pain, and vomiting. The patients remained for the most part without fever, the urine contained bile pigment, the stools were generally coloured, and a more or less intense leucocytosis was invariably present. Agglutination experiments seem to point to the conclusion that the disease is due to an increased virulence of B. coli.—Professor P. L. Pellegrino writes at length on the so-called "three-day fever" prevalent in Italy and other subtropical climates. The virus is filterable and a species of gnat, Phlebotomus pappataci, is believed to be the intermediate host whose habits coincide with the known epidemiology of the disease. The attack confers a certain degree of immunity, but relapses are not unknown, especially after excessive physical exercise. Natives of the infected localities acquire a permanent immunity.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MEETING OF COUNCIL.

AN ordinary meeting of the Council was held on July 29th, Sir W. WATSON CHEYNE, the President, being in the chair.

Leave of absence was given to Mr. William Thorburn from the meetings of the Council and from the meetings of the Court of Examiners during the period of his service abroad on military duty.

The SECRETARY reported the death on July 23rd of Mr. Edmund Owen, past Vice-President and past member of Council and of the Court of Examiners. The following resolution was carried:—

That the Council hereby express their deep regret at the death of their former colleague, Mr. Edmund Owen, whom they highly esteemed as an able surgeon and for whom they entertained the warmest feelings of personal friendship, and they desire to offer their sincere sympathy to the members of his family in the loss which they have sustained. The Council also desire to record their appreciation of Mr. Owen's many services to the College as a Vice-President, member of the Council, and member of the Court of Examiners, of the keen interest which he displayed in all matters relating to the welfare of the profession, and of his energy and devotion on behalf of the wounded. His ready sympathy and cheery presence will be sadly missed in the large circle of friends which his many admirable qualities gathered round him.

It was resolved to grant Diplomas of Membership to 113 successful candidates. It was resolved to grant, jointly with the Royal College of Physicians of London, Diplomas in Public Health to five successful candidates. It was resolved to grant, jointly with the Royal College of Physicians, a Diploma in Tropical Medicine and Hygiene to a successful candidate. It was resolved to discontinue the examination for the Diploma in Tropical Medicine and Hygiene during the continuance of the war. It was resolved that the extra examination for the first part of the examination for the Diploma in Public Health which has been held in April during recent years should be discontinued for the duration of the war. It was resolved to recognise for instruction in biology St. Chad's College, Denstone, Staffordshire, which is already recognised for instruction in chemistry and physics.

Sir Thomas Barlow was elected a member of the Executive Committee of the Imperial Cancer Research Fund. Sir John Bland-Sutton was elected a member of the Executive Committee of the Imperial Cancer Research Fund in the vacancy occasioned by the resignation of Sir Rickman J. Godlee.

A letter was read from Mr. James Lucas thanking the Council for their resolution of regret on the death of his brother, Mr. R. Clement Lucas.

THE LANCET.

LONDON: SATURDAY, AUGUST 7, 1915.

Injury and Recovery.

THE complete recovery that many of the wounded in the present war are fortunately experiencing after severe injuries has been brought to our attention by a good many communications. At the first reading of such cases the emotion is naturally one of wonder, yet it is a fact in the surgery of injuries that it is never possible to gauge from the severity of the accident the true extent of the lesion produced by it. Our knowledge here is gained mainly from experience of the injuries received in civil occupations, but the lessons thus learned are applicable to military surgery. We published last week an account of a remarkable accident in which the victim, while tamping an experimental charge of a new explosive, was impaled upon a broomstick which pinned his right hand to his right shoulder, traversing the axilla. The patient walked into the hospital, the broomstick was withdrawn with the precautions described in the note, and the patient made an uninterrupted recovery. Many of the wounds received in the trenches are, of course, wounds of the head, and it is amongst these injuries that some of the most striking recoveries have been chronicled in civil medical literature. In a well-known case reported some 60 years ago a man had bored a hole in a rock, had introduced into it a charge of blasting powder, and was engaged in tamping it, when for some reason the charge exploded and the tamping iron was forced through his head. The iron was more than three and a half feet in length, an inch and a quarter in diameter, and weighed nearly 14 pounds. It entered the left side of the face, passing under the zygomatic arch, pierced the anterior lobe of the cerebrum, tore the superior longitudinal sinus, and emerged at the site of the anterior fontanelle. The man did not lose consciousness, and though some delirium occurred a few days later, yet he recovered almost completely, losing only the sight of the left eye. A somewhat similar tale has been told, and has, we believe, considerable authority to support it, of a gunner who, in the days of muzzle-loaders, was engaged in tamping, when the powder exploded and his skull was pierced by the rod; it entered at the base at one side of the front and emerged at the vertex. He recovered with hardly a bad symptom, the only marked change being that, though he had been previously a man of quiet habits and speech, he became after the accident possessed of a copious vocabulary of foul language, which he employed freely. In another case a man who had determined to put an end to his life placed the point of a dagger on his forehead and hit the handle with a mallet, driving in the blade of the dagger until the haft rested against the skull. To his great surprise he did not fall down dead; in fact, he felt no symptoms whatever. As he could not withdraw the dagger, he went to a hospital to have it removed, but he found it necessary to tilt his hat, as the handle of the dagger was in the way. The dagger was extracted without much difficulty, and he recovered without any unfavourable symptoms. In this case it is probable that the blade of the dagger passed exactly between the lobes of the cerebrum. Even large foreign bodies have lodged in the brain for months or years without giving rise to any very serious manifestations. For instance, an officer in the year 1828 was elephant shooting in Ceylon, when, in the very act of aiming, the musket burst. It was found that the breech of the musket had penetrated the frontal bone and had lodged in the skull. Here it remained for eight years, gradually sinking downwards until it made its appearance through the palate, when attempts were made to remove it. At the end of eight years he had a fall; this was followed by headache with fever, and a week later he died. In another case a breech-pin of a musket lodged in the orbit, and more than a year later it made its way through the palate; it was removed, the patient recovering. The orbit seems to be peculiarly tolerant of foreign bodies, for there are many stories to be found in medical records of foreign bodies lying unsuspected in the orbit for lengthy periods, sometimes even for years.

Injuries to the abdomen without serious consequences are not of very rare occurrence. A case has been reported in which the abdomen of a soldier was transfixed with a bayonet, which entered at the back and emerged anteriorly below the umbilicus. No symptoms followed, and the patient recovered rapidly. In another case a ramrod penetrated the abdomen from the front and became fixed in the vertebral column, but no evidence of the injury of any viscus was forthcoming. Numerous instances of goring by cattle have been recorded where recovery has followed, despite gross protrusion and soiling of the intestines. In one case a farm-labourer was gored, and much of the bowel prolapsed through the wound; he was placed in a cart and was carried several miles to a doctor, who found the bowel still protruding, with pieces of hay and straw adhering to it, yet when the bowel was washed and returned and the wound sewn up recovery followed without symptoms. In another case a negro received an incised wound of the abdomen from which protruded the stomach, nearly the whole of the small intestine, and part of the colon. The viscera were not washed, but only wiped with a handkerchief, and were then returned, the wound being closed

with sutures. It healed within ten days and he was able to return home. A still more remarkable case has been recorded in which a young Italian woman, wishing to put an end to her pregnancy, performed a Cæsarean section on herself, and though much intestine escaped through the wound, she was able to walk several miles before reaching a surgeon, who replaced the bowel and sutured the abdominal wound. Complete recovery ensued. Severe injuries to the chest may also be followed by recovery, even in cases which at first sight had been looked upon as hopeless. In the Museum of the Royal College of Surgeons of England is the shaft of a cart which penetrated a man's body. It entered on the left side and came out in the right axilla. The man was able to walk immediately after the injury, and ultimately he recovered completely, living many years after the accident. Several other cases of penetration of the thorax by the shafts of carts have been recorded in which recovery occurred; in most of these instances the shaft had passed through the thorax from front to back; in some of the cases the constitutional disturbance was wonderfully slight. A soldier was mounting a horse, when he was thrown forward and was transfixed with his lance which pierced the chest, and appeared posteriorly, splitting the scapula. The horse ran away, the soldier hanging on. When the horse was stopped the lance was still in the man's chest; it was withdrawn and he recovered. In similar cases, and a considerable number are on record, the heart and lungs, the aorta and the vena cava have escaped injury.

In the present war, as in other recent wars, the modern sharp-pointed bullet of small diameter may pass through a limb or the trunk without giving rise to any symptoms, and there is reason to think that even the intestine may be pierced without any escape of the intestinal contents. Such fortunate escapes are, of course, not common; but a great number of cases have been reported from the front in the present war where the wounds of entrance and exit have signified the probable injury of important structures and where the symptoms have been out of all proportion mild. There is, of course, a reverse to this fortunate state of affairs. While prompt recovery may follow injuries which should apparently have proved rapidly fatal, injuries so slight that they hardly attract attention may be followed by very severe symptoms and even death. A delightful picture in the Summer Number of *Punch* shows a soldier who is lying in the open in front of the trenches, having been driven out of shelter by fear of a wasp. It is not suggested that the soldier, knowing the many good recoveries that occur from serious wounds, argued that it was safer to be shot than to be stung; but as a matter of fact the stings of bees and wasps, which usually give rise to little more than slight local discomfort, have been known in numerous recorded cases to be followed by death within a short time of the sting. Some of these fatal results may be attributed to suffocation, when the injury to the larynx is, of course, very grave, though caused by an insignificant insect, and these cases must not be classed as deaths following a tiny lesion. Mental shock has caused death in other cases of insect sting, and some fatalities have probably been due to the poison injected with the sting, which was for some reason exceptionally virulent. A blow on the abdomen, too slight to leave any sign either in the skin or in the abdominal organs, has proved fatal in a powerful man. Here the cause is probably reflex, the heart being arrested through stimulation of the vagus, for it is well known that in the frog a tap on the abdomen will stop the heart. But death from a small injury usually, of course, means pre-existing serious disease, as where the flick of a cane on the abdomen leads to death in persons suffering with the enlarged spleen of malaria, the death being due to rupture of the spleen and hæmorrhage. Most of the cases of sudden death from very slight causes must certainly be ascribed to shock, though there is usually some great weakness of the heart or some organic disease.

Examinations in Materia Medica.

AT the close of the lengthy meeting of the Comitia of the Royal College of Physicians of London held on July 15th the report was adopted of a Committee upon the Examination in Practical Pharmacy of the English Conjoint Board. The appointment of this committee was the outcome of a letter from an examiner expressing dissatisfaction with the Examination in Practical Pharmacy, and suggesting that the scope of the examination should be greatly extended. The committee was appointed nearly a year ago, but its work could not be proceeded with until after the publication of the new British Pharmacopœia, since it was evident that no alteration of schedules could be made until the scheme of inclusions and omissions in the official standard was authoritatively stated. The range of drugs is, however, of secondary importance to the information concerning them which is to be required. The chief point of objection to the existing examination is, in the opinion of its critics, that it embraces a great deal of useless knowledge which can be crammed up in a short time. The range extends only to the recognition of a limited number of drugs and to the knowledge of the general nature, composition, and most important physical and chemical characters of a more extended list, together with the doses, preparations, and the relative proportions of the active ingredients in the leading Pharmacopœial preparations. The limits assigned to the examination seem to preclude any questions concerning the actions of the different remedies, although this omission is to some extent made good at the final examination in medicine.

In the report of the committee of the Royal College of Physicians of London examples from recent examination papers show the type of questions which have been included in the final examination. They are mainly concerned with the therapeutic uses of groups of drugs, and there is no inquiry as to the reasons why these drugs should be employed, still less is there any attempt to ascertain at this stage of the student's career whether he has an intelligent appreciation of the results which might be expected from the use of various compounds in the absence of any disease. It is, we believe, nearly 20 years since dissatisfaction with the practical examination in materia medica conducted by the English Conjoint Board was last brought before the notice of the College. At that time it was felt by a committee of teachers and examiners that it was futile to ask anything about the actions of drugs before the student had studied anatomy and physiology. An answer might indeed be given if the student had been in the hands of a judicious crammer, but this could not show any knowledge of value if the candidate was profoundly ignorant of the meaning of such terms as blood pressure, cardiac rhythm, and the like. The committee of teachers proposed that the subject of materia medica should be divided into three parts, an examination in practical pharmacy, one in pharmacology, and one in therapeutics, and it was recommended that the second examination should not be held before the students had attended lectures on anatomy and physiology, while the third, which involves a knowledge of medicine, might conveniently be added to the final examination, after work in the wards. Many regrets were felt when this scheme was rejected by the Royal College of Physicians of London, apparently on the ground that the examination in pharmacology added to the number of obstacles placed in the way of candidates, and the scheme, bereft of its most important part, resulted in the present system of examination, which consists of a short *viva-voce* on matters of small importance. It is satisfactory to find that the Royal College of Physicians of London has now taken a much more rational view.

The list of drugs which should be recognised has been very considerably curtailed, and this is reasonable, since most practitioners in future are unlikely to continue to dispense. The drugs left in the short list are only what may be regarded as "emergency drugs," and they are of such importance that everyone possessing a qualification should be able to recognise them at a glance. Students are no longer to be worried about recognising crude drugs, portions of stems or roots, leaves or seeds, which are never in this form to be found on the shelves of ordinary pharmacies or in the dispensaries of medical men. A second short list comprises drugs, of which there are official preparations, intended for internal or subcutaneous use, and it is desired that a knowledge should be shown of the proportions of the active ingredient. It may be noted with satisfaction that this list includes remedies which in overdose have toxic actions; there can be no doubt, therefore, of the wisdom of indicating in this way the special need of accurate knowledge. A third list is given of drugs of which the doses should be committed to memory; this list is the longest and also the least satisfactory. It is impossible not to have a lurking suspicion that it represents a developmental stage of the work of the committee before getting to final grips with the crux, the question whether, if the pharmacological action of drugs was permitted to form an integral part of the examination, it would be desirable to limit the range of questions upon this subject. The essential recommendations, which have been accepted by the Royal College of Physicians of London, are that a *viva-voce* examination in elementary pharmacology should be taken as part of the Second Examination, which at present deals only with anatomy and physiology; and that, in order to preserve the elementary character, candidates are not to be examined upon the experiments by which the actions of drugs have been determined, nor are they at this stage to be questioned on therapeutics. This represents a very considerable advance, and it will serve as a valuable stimulus to those engaged in teaching pharmacology. It has long been a blot on the curriculum of the English Conjoint Board that attendance at lectures on pharmacology and therapeutics was obligatory, while students had no opportunity of indicating that they had taken a serious interest in pharmacology. This has, we fear, led to perfunctory attendance, which inevitably reacts upon the teacher and deadens the enthusiasm with which he endeavours to impart information, or to encourage his class to learn how they may, in their turn, hope to throw light upon many obscure facts connected with the treatment of disease.

ALEXANDRA DAY DISTRIBUTION.—At a meeting of the Alexandra Day Distribution Committee held at the Mansion House on July 30th, under the presidency of the Lord Mayor, it was announced that after payment of expenses £24,000 would be available for distribution, or £5000 more than last year. Of this sum Queen Alexandra has already distributed £7375 among the hospitals in which she is interested, and the balance has been allocated as follows:—University College Hospital, £550; St. Bartholomew's, £525; Acton Cottage Hospital, £140; Guy's, £150; Bolingbroke, £150; Queen's Hospital for Children, £150; King's College Hospital, £150; Victoria Hospital for Children, £200; Croydon General, £350; Miller, £200; King Edward Memorial, Ealing, £200; East Ham, £200; Fulham and Kensington, £250; Metropolitan, £300; West London, £250; Hampstead General, £250; Hornsey Cottage, £250; Ilford Emergency, £200; Great Northern Central, £500; York-road Lying-in, £400; St. Mary's, £200; Poplar, £200; Queen Charlotte's, £400; Royal Eye, £250; Evelina Hospital, £200; Prince of Wales, £200; Home for Incurables, £200; Passmore Edwards' Hospital, £350; Woolwich Cottage, £200; and the Dental, £200. In addition to the £24,000 raised in the metropolis, £42,000 were collected in the provinces on Alexandra Day for local charities.

Annotations.

"Ne quid nimis."

THE METROPOLITAN HOSPITAL SUNDAY FUND.

WE congratulate the Metropolitan Hospital Sunday Fund upon having already collected £11,100 in excess of the total reached at this time last year; on August 5th £70,600 had been received. This total falls far short of the £100,000 for which we regularly plead, but it is satisfactory to know that, in spite of the many urgent appeals that are being made to the charitable as a consequence of the war, the claims of the voluntary hospitals have not been forgotten. At no time has the need been greater, and never have our hospitals been called upon to discharge more onerous duties. How splendidly those duties have been performed every one should know, for it requires but little imagination to picture the plight of the wounded had they been without the help which hospitals have rendered both in this country and at the seat of war. At the council meeting of the Metropolitan Hospital Sunday Fund held at the Mansion House on July 29th, under the presidency of Sir Ernest Tritton, it was announced that 246 institutions had applied to participate in the Fund, and that £69,297 were available for distribution. Of this sum 7½ per cent. will be set aside for the purchase of surgical appliances and 2½ per cent. for district nursing associations. Apart altogether from the very urgent need of the hospitals and their merits, which should ensure those needs being supplied, the promptness with which the Metropolitan Hospital Sunday Fund distributes the moneys committed to its charge, the care with which it apportions them, and the economy with which it does its work ought to appeal to all.

THE FINANCIAL POSITION OF THE ROYAL SOCIETY OF MEDICINE.

THE Fellows and Members of the Royal Society of Medicine are to be congratulated on their satisfactory financial position. The removal from Cavendish-square to their new building in Wimpole-street a little more than two years ago necessitated some heavy expenditure which was not relieved by the share which the Society bore in entertaining the International Congress of Medicine in the summer of 1913. The total expenditure of that year was £13,255, including £962 13*s.* for extraordinary expenses. At the annual general meeting held on July 6th of this year under the chairmanship of Dr. Frederick Taylor, not only did the income and expenditure account for the year ending Sept. 30th, 1914, indicate an excess of receipts over disbursements of £849 2*s.* 5*d.*, but the balance sheet showed that the general assets of the Society were £76,579 12*s.* 2*d.* in excess of the liabilities. The total expenditure for the year amounted to £12,071 17*s.* 5*d.*, with a total income of £12,920 19*s.* 10*d.* The subscriptions of Fellows and members amounted to £9593 10*s.*, the admission fees to £476 14*s.*, and the Fellows' voluntary subscriptions to £333 18*s.* The total ordinary expenditure was less by £220 9*s.* 10*d.* than in the previous financial year. The library expenses showed an increase of £157 3*s.* 11*d.* The passing of the accounts unanimously sufficiently showed the satisfaction of the meeting, which was increased by the statement of the President that, supposing no adverse influence intervened, the balance for the present year might be even larger than that for the year they were considering. The removal to the new premises has therefore been abundantly justified, though, as was pointed out by Dr. Taylor, a comparison of the balance sheets of the last few years showed that three or four years before entering the new premises the receipts were £9000 or £10,000, with expenses somewhat less, while the receipts and expenses of the last two years had come to about £2000 more, but the difference between the receipts and expenses promises to be quite notable. This expected favourable balance will be used for reducing the loan at the bankers, which at the commencement of the financial year amounted to £26,000, and we agree with the President that it must be the object of the Society to reduce the loan as soon as possible. The means available for this are the balance on the current income and expenditure account, and additions to the Building Fund, which this year have been rather small owing, no doubt, to the monetary calls which the war has made on members and Fellows. As the President remarked, it would perhaps be too sanguine to expect any generous donor at this crisis in the nation's history to make the Building Fund the object of his generosity, even though the treasurers might feel justified in accepting the gift supposing it were made. Is it too much to hope that by the time the next annual meeting is held the treasurers may be put to the test?

FUGUES.

A SHORT time ago Mr. A, well known to the public as a tennis player, was sentenced at Westminster police court to six months' imprisonment in the second division for unlawfully trespassing on the London, Brighton, and South Coast Railway at Grosvenor-road railway bridge, contravening the Defence of the Realm Act. It appears that he entered a train at Brighton, went to sleep, and remembered nothing more till he found himself on the railway line at the above-mentioned spot. A signalman who saw him stated that he seemed dazed, weary, and worn out, although he came round in a short time. On appeal at the London Sessions the conviction was quashed, medical evidence having been forthcoming to show that it was quite possible and easy for Mr. A to have got where he was without knowing anything about it, and the judge being satisfied that he wandered on to the line unconsciously. Mr. A, in explanation, declared during the hearing of the case that he had been overworked, and that when overworked he knew that he was apt to "lose himself" and to do things unconsciously or automatically. The case, though comparatively trifling in itself, belongs to a wide group which is of much medico-legal importance. Broadly speaking, there are two main classes of case to be considered—viz., cases of hysteria and cases of post-epileptic automatism. To deal with the latter first, it is well recognised that after an epileptic fit, which may be either mild or severe, the patient may pass into a confusional state of variable duration, in which subconscious activity may reach a high and complex grade, so that while he is in reality irresponsible and unaccountable for his actions, he may present little or no sign of aberration to the unskilled observer. Numerous cases of this sort are on record, and

neurologists who deal with the epileptic are familiar with their everyday occurrence. After a fit one patient will run and hide under an article of furniture or in the open under a hedge, another will undress, a third will put any objects that are lying about into his pockets, a fourth will become violent, abusive, and destructive, and so on. Further, such epileptic automatism may occur where no visible fits or seizures have ever been detected, and where its periodicity indicates that it is a true psychical equivalent—i.e., it occurs in place of, and instead of, the ordinary crude motor disturbance of an epileptic fit. Without doubt crimes have been committed in this state. In cases of hysteria, again, one of the characteristic features of which neurosis is the occurrence of what Janet calls monoideic somnambulisms, the patient frequently loses touch with his surroundings and passes into a state marked by great subconscious activity, which may express itself in acts of which he is quite unaware. The hysterical fit is, in Janet's terminology, a somnambulism, and it is only a step from that condition to the hysterical "fugue," the ambulatory automatism of some authors. Some of the cases that have been recorded read like romances; they are, indeed, romances of real life. For details the reader may turn to Janet's book on the "Major Symptoms of Hysteria." Striking cases of post-epileptic automatism, taking the form of fugues, will be found in Gowers's "Epilepsy," and in two interesting papers by Dr. W. S. Colman, which were published in THE LANCET[1] a number of years ago. Recognising these well-established facts, the physician will have no difficulty in interpreting the phenomena in cases such as the above, although it may not always be easy to determine the exact nature of the etiological factor; other morbid conditions than epilepsy and hysteria may lead to the development of a "twilight state" during the persistence of which the patient is not responsible for his actions.

HYDROCEPHALUS DUE TO CEREBRO-SPINAL MENINGITIS.

INTRODUCING it as possibly a case of chronic meningitis, Dr. Aaser[2] describes the case of a child treated for cerebro-spinal meningitis at the age of 9 months in June, 1912. At this time the signs were screaming, opisthotonos and stiff neck, positive Kernig's and Brudzinsky's signs, dermographism, an extensive petechial rash, daily vomiting, and the presence of Gram-negative diplococci in the nasal mucus; lumbar puncture was performed, 10 c.c. of pale fluid were withdrawn, and this inoculated on ascites-agar developed numerous colonies of Gram-negative diplococci. The infant was very ill for three or four weeks, but left the hospital after seven weeks, during the next few months at home becoming hydrocephalic, completely blind, and helpless. Fourteen months later (September, 1913) the child was brought to the hospital again on account of post-meningitic paralysis. On this occasion the head was large but of normal configuration, 52 cm. in circumference (instead of the normal 47–48 cm.). The muscles of the neck were completely paralysed; the child could not sit up or stand, the arms and legs were somewhat atrophic, and the muscles lax. In November, 1914, the child was still unable to stand up or walk, and had been stuporous for a week, but presently the state improved. In January, 1915, the child had an attack of nasal diphtheria; a blood count showed 4·9 million red cells and 16,300 white cells, 80 per cent. of them polymorphonuclears. Between February and May, 1915, lumbar puncture was performed 12 times, over 400 c.c. of cerebro-spinal fluid being removed in all. On several occasions this fluid gave growths of Gram-negative diplococci when inoculated on ascites-agar, but only if it was first "enriched," to use the bacteriologists' phrase, by being kept for 48–60 hours in the thermostat before inoculation. The fluid contained ¼–½ part of albumin per 1000, as measured by Esbach's method. The child improved but little under this treatment, though its leucocyte count fell to 10,000; the temperature was mostly subfebrile. Aaser remarks that the patient is definitely mentally deficient, and he supports Westenhofer's view that hydrocephalus occurring after cerebro-spinal meningitis is really evidence of a chronic inflammatory process going on in the meninges.

[1] THE LANCET, July 5th, 1890, p. 14, and July 21st, 1894, p. 128.
[2] E. Aaser: Tidsskrift for den Norske Laegeforening, Christiania, 1915, vol. xxxv., p. 607.

BULLET WOUND OF THE CEREBELLUM: RECOVERY AFTER UNUSUAL SYMPTOMS.

A REMARKABLE case has been recorded by M. J. Dupont and M. J. Troisier at the Société Médicale des Hôpitaux, 1915. The patient received a bullet which entered the head above and behind the left ear and passed out through a point behind the right ear. There followed complete motor paralysis of the external eye muscles and diplopia. There was, in addition, marked difficulty in swallowing, and the voice became markedly weak and muffled. There occurred also tachycardia, the pulse-rate reaching 140 per minute and sometimes 150. There was alternation in the force of the beats. Polyuria was present, two litres of urine being passed in 24 hours. No pyrexia was observed. Some time afterwards a typical cervical herpes appeared, associated with some cervical gland enlargement. After 15 days the symptoms gradually lessened. Recovery proved complete except that vision for long distance was rather defective.

THE DISINFECTION OF ANTHRAX-INFECTED HIDES.

THE spores of anthrax in hides are found chiefly in connexion with blood stains, and these and other material with which the spores are likely to be associated are mostly colloidal in nature. Mr. F. W. Tilley, senior bacteriologist to the Biochemic Division of the United States Bureau of Animal Industry, discusses in a useful pamphlet[1] the best method of disinfection of hides and skins infected with anthrax spores. The problem hitherto, he says, has been to get at the anthrax spore when embedded in a gelatinous, albuminous, or other colloidal material. Briefly, two methods of effective disinfection may be employed. The first, called the Seymour-Jones method, consists in the use of dilutions of mercuric chloride, 1 to 2500, plus 1 per cent. of formic acid. But with this method the treated hides are not to be subjected within a week or two to the action of any substance that will neutralise the disinfectant. This would be the case, for instance, if hides were disinfected at foreign ports before shipment to this country. The second method, named that of

[1] A Bacteriological Study of Methods for the Disinfection of Hides Infected with Anthrax Spores. By F. W. Tilley. Reprint from Journal of Agricultural Research, Department of Agriculture, Washington, U.S.A.

Schattenfroh, consists of employing hydrochloric acid and sodium chloride, in the proportions of 2 per cent. of the acid and 10 per cent. of the salt, with 48 hours' exposure. This procedure is entirely satisfactory from the bacteriological standpoint. Mr. Veitch, chemist in charge of the leather and paper laboratory of the Bureau of Chemistry, found that no marked differences in colour were present in the tanned leather of hides thus treated, and there was no difference in the appearance of the grain of the leather and no greater liability to cracking. It would seem, therefore, that neither the Seymour-Jones nor the Schattenfroh method exerts any injurious effect upon hides or leather.

PILIMICTIA.

THE fact of hair being passed with the urine has been noticed almost from time immemorial, and this rare phenomenon has, on account of its strangeness, so struck both physician and patient that it is easy to understand the diligence with which an explanation of it was sought in the past. That both Hippocrates and Galen had actually observed the emission of hair with the urine cannot be doubted. In the Aphorisms (iv., 76) it is stated: "In persons who pass small pieces of flesh or hairy particles with the urine, such matter is made by the kidneys." Galen (De locis affectis, l, vi., cap. 3) speaks of "things resembling hairs which Hippocrates saw passed with the urine and were a foot and a half long or more," and he wonders "how they could be contained in the interior of the kidneys." He then continues: "When I saw hairs passed in the urine on micturition, on account of their colour and size I was ready to believe those who spoke of fatty and heavy substances which heat evaporated and dried up and which were to be found in the veins." From these descriptions it seems reasonable to suppose that Hippocrates and Galen use the term "hairy particles" and not *hairs* to designate such substances because they considered them, one a product of the kidneys, the other a product of the veins. Arnaldus in 1500 dedicated a chapter of his works to pilimictia, and spoke of "hairs mixed with fat and skin coming from the kidneys with the urine." Sculteius in 1658 and Klett in 1703 also wrote on the subject. It is now recognised that pilimictia is a phenomenon due to the rupture into the bladder of a dermoid cyst containing hair, and Dr. M. Carraro in a recent number of *Il Morgagni* has published a case of this kind which occurred in the Ospedale Maggiore at Milan. The patient, who was a woman aged 40, and had suffered from dysuria, was ascertained to have a vesical calculus, which after extraction was found to be about the size of a large nut and was covered with hairs of from 1 to 2 cm. in length. For some time after the operation hairs were passed on micturition, covered more or less with calcareous matter, some being entirely free. Cystoscopy revealed a swelling with an irregular aperture at the posterior part of the bladder. Subsequently a cyst was removed by operation through the bladder about 6 cm. long and 10 cm. broad. It consisted of skin and pigmented hair, with enormously developed sweat glands, and showed evidence of marked inflammatory processes. The situation of the tumour almost in the median line suggested that it was a dermoid cyst which had developed in the paravesical tissue, but an ovarian or broad ligament origin could not be excluded without laparotomy.

APPETITE AND THE CHEMISTRY OF THE AIR.

IN a note from the laboratory of the New York State Commission on Ventilation Mr. C. E. A. Winslow and Mr. G. T. Palmer report that neither the pulse, blood pressure, body temperature, respiration, nor metabolism is influenced to a measurable degree when human subjects are exposed for long periods to the air of a room in which all the chemical products due to human presence have been allowed to accumulate. This was the case in spite of the carbon dioxide present amounting on the average to over 30 parts per 10,000, but the temperature of the inhabited space was kept down by artificial means. In the course of the investigation, however, a new measure of the influence of vitiated air was discovered which seems to indicate that there is, after all, an effect produced upon the body by the chemical constituents of the air of an occupied room. This effect is manifested, it is stated, in a diminished appetite for food. In each series of experiments the subjects were supplied with a fresh air-supply of 45 cubic feet per minute on half the days, while on the other days no air was supplied, and apart from unavoidable leakage through walls and ceilings, the carbon dioxide, organic matter, and whatever else was given off from mouths, bodies, and clothing accumulated in the room. The temperature and humidity, however, were controlled so as to be the same on the days when ventilation was provided and on those when ventilation was absent. After the subjects had been in the room for from two to three hours, a luncheon made up of weighed portions of known calorific value was served, and the amount of food left uneaten was weighed in order to determine by difference the amount consumed. In the view of the authors the results of these experiments appear to warrant the conclusion that there are substances present in the air of an unventilated occupied room (even when its temperature and humidity are controlled) which in some way, and without producing conscious discomfort or detectible physiological symptoms, diminish the appetite for food. It is suggested that the effect of such an influence might in time be very important, and that the observed beneficial effects of fresh air have been in some cases connected with this phenomenon. No speculation is made as to the chemical nature of the substances which these authors conclude cause this interference with the appetite, producing perhaps a mild nausea.

THE SIGNIFICANCE OF SOME FORMS OF THORACIC DULLNESS IN CHILDREN.

IT is well known that in young children with a positive von Pirquet reaction a pleximetric examination of the thorax frequently reveals an area of dullness in the supra- and infra-spinous fossæ, with increased sense of resistance. Fremitus over this area is either normal, increased, or diminished, while auscultation discloses in the majority of cases prolonged expiration and feeble vesicular murmurs. Subcrepitant râles are frequently heard. This change in percussion sound, moreover, frequently involves the supraclavicular fossa and less often the infraclavicular of the same side. There are often diminished expansion of the affected side and cough. Considering the relative rarity of pulmonary tubercle in infants and the relative frequency of these modifications of percussion in the apical regions in those who react positively to tuberculin,

with more or less marked clinical evidence of tracheo-bronchial adenopathy, Dr. S. Maggiore, in *Il Morgagni* recently, has made a systematic study of these phenomena by radiological examination to ascertain whether in all such cases the dullness was due to thickened lung tissue or to some other special conditions. In 37 cases observed by him the presence of shadow in the upper lobe of the lung was noticed only four times. In all these four cases râles were heard. In four cases necropsies were performed, and in one of them in whom râles had been heard no pulmonary lesion was found, but there were enlarged caseating glands. In the remaining patients, including those who presented no clinical signs of adenopathy, radioscopy showed enlargement of the tracheo-bronchial glands on the same side as the dullness. These observations show that apical dullness in infants is chiefly due to glandular enlargement even in cases where râles are also heard, and are of importance in guarding against the mistake of attributing it to lesions in the pulmonary tissue itself.

THE MIGRATION OF RATS AND THE SPREAD OF PLAGUE.

RATS play so prominent a part in the diffusion of bubonic plague that the study of their migrations has become a subject of considerable importance. There are certain experts who apparently think that this part of the plague problem has not yet received the amount of attention that it deserves, and among these we may include Dr. R. H. Creel, surgeon, United States Public Health Service, who has recently published an article in the official journal of that body, *Public Health Reports* for June 4th, entitled "The Migratory Habits of Rats, with Special Reference to the Spread of Plague." In this contribution Dr. Creel gives details of some experiments which he made with captured rodents at New Orleans, where during the present year there has been an epizootic of rat-plague. This epizootic began along the water front and spread "fan-like" with comparative rapidity to the circumference of the city, a distance of some two or three miles or more. The experiments were made with two batches of the rodents collected from various parts of the town, each batch being so marked that it could be easily distinguished from the other. The first lot comprised 179 animals which were liberated on March 28th in the central or residential quarter of New Orleans, in which were situated food depôts, groceries, stables, &c., where food might be got by the animals, but where there was comparatively little underground shelter for them. Almost on the same day 19 of the marked rats were found dead near the point of liberation, the deaths being, it is stated, a result of injuries incidental to captivity, so that there remained 160 animals to be accounted for. In little more than 48 hours one was retaken a mile away, and within a fortnight some others were recaptured as far as three or four miles from the place at which they had been released; altogether 103 of the 160 were trapped again at various distances away from the original point at which they had been set at liberty. The second batch, 113 in number, were let loose on April 8th in a different district of the city, and one where there were several wholesale provision warehouses and similar establishments that attract rats. Some old wooden culverts and drains in the streets provided underground refuges for the liberated animals. In these circumstances it was hardly expected that this batch of rats would travel so far afield as the first, and this expectation proved to be correct, for only eight of them were recaptured at any great distance from the place at which they had been released. Within a period of four weeks 60 of the 113 had been retaken at various points, mostly in the vicinity of the place of their liberation. It may be mentioned that all the rats included in these experiments were carefully examined for any traces of plague before being released, and all had been found free from signs of infection. If they had not been examined, and if by any chance one or more of them had been infected by plague, the disease might have been carried to distant parts of the city and fresh foci of the infection thus established. It has been suggested that rats suffer at times from the "Wanderlust" or irresistible craving for travel, but the evidence adduced is not so far altogether convincing on this point. But it is admitted, on the other hand, that various occurrences may lead rats to forsake their haunts and wander forth; for example, when food-supplies are running short, when some fatal epizootic occurs among them, or in order to escape from some much-feared natural enemy. The mating instinct, too, may lead at least some members of the rat community to travel some distance afield. In this country, especially in the rural districts, it is well known that there is an exodus of the rat population in the spring from the neighbourhood of farmhouses and village dwellings to the hedgerows and ditches in the open; and similarly towards winter there is a return from the open country to the vicinity of houses inhabited by man. The subject is an interesting one and at the same time important in its connexion with plague.

VENTRICULAR FIBRILLATION AND CHLOROFORM SYNCOPE.

THE paper published on p. 283 dealing with this subject by Dr. E. H. Embley, of Melbourne, is of more than passing interest. Dr. Embley has established for himself the reputation of a careful and exact experimenter and reliable clinical observer. The work which he has done upon the subject of vagal inhibition of the heart in the early degrees of chloroform narcosis has thrown much light upon a difficult problem. Paul Bert it was who, experimenting upon chloroform many years back, drew attention to what he called the anarchical phase of chloroform's action upon the heart. The exact results obtained by the electrocardiographic method enable us to recognise that this, no doubt, was ventricular fibrillation. Later MacWilliam's excursion into this part of the chloroform question led him to believe that given the presence of certain conditions the heart musculature passed into what he then termed "delirium cordis." That this procession of phenomena can and does arise in experimental administration of chloroform cannot be questioned, but the thesis that Dr. Embley sets forth to prove is that the causation of ventricular fibrillation has not been proved so far to be the result of light anæsthesia but rather of overdosage, using that term in its conventional connotation. There certainly has been much confusion of thought among those who seek to attribute the dangers of chloroform to low degrees of narcosis rather than to "overdosage." To begin with, anæsthesia is a term simply

implying the arrest of sensory perceptions, the result of the taking up of a certain amount of an anæsthetic by the tissues. When anæsthesia exists it is *primâ-facie* evidence that the distribution of the anæsthetic is general and that the nervous tissues have become "immobilised" by its influence. Short of this distribution the patient may undoubtedly be killed by an undue strength of the anæsthetic reaching the myocardium and herein rests the usually accepted view that undue strength of vapour administered at the commencement of the induction is a danger. The acuity of perception which marked all Lord Lister's views showed itself when he accepted the danger of any method of chloroform administration which failed to gradually increase the strength of the vapour. As he put it, "the atmospheres perpetually oscillating between the needlessly strong and the uselessly weak." It has been demonstrated over and over again that a method which permits of sudden accessions of strength followed by periods of partial resumption of consciousness places the patient in danger because his heart becomes "irritable," or, as we now term it, travels dangerously near to the state of ventricular fibrillation. This, however, is far from affording evidence that a rapid induction by the use of a strong vapour protects the patient from such a peril. Clinical evidence and, indeed, a mass of experimental work behind it point to the converse direction. Yandell Henderson would have us to believe that the respiratory storms incident to this faulty system of irregular intake of the anæsthetic, whatever agent it may be, produce an acapnic condition, itself capable of promoting a cardiac state leading to ventricular fibrillation. Without attempting to appraise the value of the many theories based on the observed facts concerning this cardiac condition, we welcome the reasoned *caveat* which Dr. Embley pronounces against undue haste in accepting revolutionary views on chloroform methods until more extended knowledge, both experimental and clinical, have entitled us to accept these views as duly proven.

THE USE OF BONE-GRAFTS IN SURGERY.

ONLY within the last two or three years has a thorough appreciation of what bone-grafting means been recognised in surgery. Its use is, of course, nothing new. Witzel replaced part of the clavicle with a graft from the spine of the scapula, and Bittner transplanted a large graft from the tibia and turned it down to fill the gap of the resected portion. Briefly, the method consists in transplanting, usually from the patient himself, a portion of bone to replace or support a similar structure elsewhere in the body. The method may be used, according to Murphy: (1) to correct deformities resulting from defects of development, as aplastic extremital bones—radius, ulna, humerus, tibia, fibula, and femur; (2) to produce union in ununited fractures; (3) to replace bone removed by destructive infections; (4) to restore or supplant fragments dislodged or destroyed by fractures; (5) to replace bone removed for certain non-malignant or encapsulated malignant neoplasms; and (6) to immobilise joints, as in Pott's disease or infantile paralysis. The tibia or a portion of rib are the bones most often made use of for the graft on account of ease of access and the excellence of the graft afforded. A chisel or a rotary saw is used, and the graft is only removed after the site of the grafting is prepared. It is usual amongst many surgeons to remove the periosteum with the bone, and this structure together with the overlying aponeurosis are sutured after the graft has been placed in position; the ends of the graft must be carefully secured in its bed. In the case of non-union of bones three methods may be employed: to transplant the bone into a furrow arranged for it in the new locality; to move the graft down from the same bone to make a solid bridge over the fractured area; or to enlarge the medulla of each bone, taking a graft from the sound tibia, and inserting it as a peg or bridge between the two fragments. Each method has a distinct place. The results of bone-grafting operations, given scrupulous asepsis, are very gratifying. Much discussion and experimental work has taken place upon the means through which these grafts act. The efficient circulation in the graft appears to be an important factor. Some hold that the bone, as such, dies, only its periosteum maintaining its existence, when the bone itself merely acts as a scaffolding, as it were, upon which the new bone can be formed; others suggest that the bone in the graft is reproduced from the proliferation of osteoblasts derived from the bone itself and occurring independently of the periosteum, whose only function is that of a limiting membrane, preventing their spread into the surrounding tissues. A valuable practical résumé of the subject has been contributed by Mr. W. G. Turner to the *Canadian Medical Association Journal*.

THE USELESSNESS OF STRYCHNINE IN CARDIAC FAILURE.

STRYCHNINE is often given to strengthen the heart in cardiac failure, yet there has never been any sound basis for this view, and recent investigations throw doubt upon it. In the *American Journal of the Medical Sciences* Dr. L. H. Newburgh has reviewed the evidence on the point, as well as given his own experience. The earlier observations made on the hearts of warm-blooded animals are conflicting. Sometimes a slight acceleration and at other times a slight slowing have been noted. In 1905 Igersheimer published a careful study of the action on the rabbit's heart. He could produce no change in rate until he had injected several times the amount that would cause convulsions in non-curarised animals. In his work on "Diseases of the Heart" Sir James Mackenzie has written about cardiac tonics as follows: "The most popular remedy of this class is strychnine. I have carefully sought for its special effect on the heart and found none. When I inquired into the evidence for its supposed good effect I found it was practically all clinical, and clinical evidence endows the drug with the most diverse properties. It is recommended as a cardiac stimulant in slow-acting hearts and even in heart-block it is said to quicken the beat. It is also recommended in the too excitable heart, as when there are extra systoles and in the rapid heart of acute myocardial affections. It is said to be beneficial in cases of low blood pressure and equally beneficial in cases of high tension and even in angina pectoris." In 1913 Dr. John Parkinson and Mr. R. A. Rowlands published in the *Quarterly Journal of Medicine* a careful investigation of the effect of strychnine given hypodermically in heart failure. Records were taken with the polygraph and the manometer in 50 cases of severe heart failure, with or without valvular disease, admitted to the

London Hospital. In no case was any increase of blood pressure produced by the injections. The average pulse-rate before injection was 134·1, after it 104. The slight fall was attributed to an initial rise caused by apprehension created by the apparatus. The rate and amplitude of the respirations were unaffected. The conclusion was that "strychnine has no effect which justifies its employment as a rapid cardiac stimulant in cases of heart failure." As the evidence that a single dose of strychnine does not benefit heart failure does not prove that its prolonged use is not beneficial, Dr. Newburgh investigated this point in eight cases of chronic heart failure in which a careful regimen had produced no improvement. Strychnine was then given in doses varying from 0·03 to 0·1 grain and the effect upon the pulse, respiration, urinary excretion, systolic and diastolic pressures was noted. None of the patients were benefited and compensation was not improved in the slightest, though in some of the cases strychnine was administered until toxic symptoms were produced. Four of the patients subsequently recovered compensation under digitalis. The conclusion is that neither pharmacological nor clinical evidence justifies the use of strychnine in the treatment of acute or chronic heart failure.

INCIDENCE OF NOTIFIABLE INFECTIOUS DISEASE IN 1914.[1]

IN a report recently issued by the Local Government Board the incidence of notifiable infectious disease is shown for the several administrative counties and boroughs, as well as for each of the sanitary districts of England and Wales. The report, which relates to 1914, has been prepared by the Board's medical officer, Dr. Arthur Newsholme, and is the fourth of a series. The medical officer states, as he has in previous reports, that under the Board's General Order of December, 1910, the returns which form the basis of these reports are forwarded to Whitehall every week by the health officers of each sanitary district of the country; in exchange for which each medical officer of health receives from the central office a weekly summary of the cases returned in every other district.

Sickness Returns in 1914.

Two summary tables are given showing the absolute and relative incidence of the chief diseases notifiable under the Act of 1889. On reference to these tables each health officer will be able to pursue local comparisons by consulting the details for the several administrative areas. The data for urban and rural aggregates of districts given for each county will be especially valuable for this purpose. In England and Wales (including ports) *small-pox* was reported last year in 65 cases, some of which were notified in error. In the three preceding years the attacks had averaged 177 in number. *Scarlet fever* was notified in the proportion of 4·47 per 1000 population, against 3·58 in 1913 and 2·90 and 2·98 respectively in the two preceding years. The highest rate, 9·38, was reported in the county of Monmouth, and the lowest rate, 0·90, in the Isle of Ely. *Diphtheria* was notified last year at the rate of 1·60 cases per 1000, against 1·39 in 1913 and 1·24 and 1·33 in the two preceding years. The highest county rates were 4·15 in Bedford, and the lowest 0·34 in Buckingham. In England and Wales *enteric fever* was notified in the proportion of 0·23 attack per 1000 living, against 0·22 in 1913 and 0·23 and 0·38 in the two preceding years. The highest rate was 0·59 in the county of Durham and 0·52 in Northumberland; the lowest rate was 0·02 in Carnarvon and in the Soke of Peterborough. The seasonal distribution of this disease, as well as of scarlet fever and diphtheria, during the last three years is shown in an additional table, in which special weekly excesses of 30 per cent. above the weekly mean for the whole year are indicated by heavy type. There appears to have been a steady increase in the prevalence of both scarlet fever and diphtheria in the last three years, associated with which there has been a more uniform distribution of these diseases in 1914 than in 1913. Enteric fever showed a slightly increased prevalence in the later as compared with the earlier year; its seasonal prevalence in these years did not greatly vary. No case of *Asiatic cholera* occurred in this country last year. Nine cases of *plague* were reported; also 315 cases of *cerebro-spinal fever*, and 509 of *poliomyelitis*.

Tuberculosis.—A further table shows the incidence of pulmonary and of other forms of tuberculosis in this country, as far as this can be gathered from the notification returns, which, from the nature of the case, are less likely to be complete than are the returns for other notifiable diseases. The data relate to the three years elapsed since tuberculosis first became compulsorily notifiable throughout England and Wales. The cases notified and the rate in terms of population are shown for London and the provinces, and also for the Principality of Wales; but for reasons already explained the rates are not at present given for the smaller administrative areas separately. The returns, especially for the metropolis, contain a considerable number of duplicate notifications; the ratios given must therefore be considered in the light of this circumstance. Corrected figures are promised in the medical officer's forthcoming annual report. This table indicates a steady decline in the notifications of tuberculous phthisis in the course of the last three years—the numbers corresponding to a rate of 2·20 per 1000 last year, to 2·65 in 1913, and to 3·03 in 1912. In proportion to population the notifications were far more numerous in London than in the provinces, and this has been the case in each year included in the table. The data for all other forms of tuberculosis are for the present grouped together.

Small-pox Abroad in 1914.

As in previous years, Dr. Bruce Low contributes a sketch of the occurrences of small-pox abroad during 1914. The returns are necessarily incomplete, as the present statement was prepared before the full reports for the year had been received. The facts given show how widely spread was the prevalence of this disease, and further indicate the places from which importation of infection was chiefly to be expected.

[1] Reports to the Local Government Board on Public Health and Medical Subjects. New Series, No. 106. London: Wymans. Pp. 87. Price 9d.

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

THE WEEK'S SUBSCRIPTIONS.

THE following subscriptions to the Fund have been received by Dr. Des Vœux:—

	£	s.	d.
North of England Branch of Fund (per Dr. James Don and Mr. A. S. Perceval, Hon. Secs.) (eighteenth donation, total £771 18s. 9d.)—			
Dr. S. Robson	1	1	0
Warrington Pharmacists, collected by Mr. H. M. S. Hill (per Dr. Murray, Hon. Sec., Warrington Division, B.M.A.)	7	12	6
Pharmaceutical Society of New Zealand (per Mr. C. M. Nielsen, Registrar)	100	0	0
Northumberland Pharmacists' Society (per Mr. G. R. Patterson)	1	1	0

Subscriptions to the Fund should be sent to the treasurer of the Fund, Dr. H. A. Des Vœux, at 14, Buckingham-gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Ltd.

THE APPEAL FOR SURGICAL INSTRUMENTS.

Surgical instruments should be sent to the Master of the Society of Apothecaries, Apothecaries' Hall, Blackfriars, E.C.

THE AUSTRALIAN MILITARY HOSPITAL.

(BY OUR SPECIAL SANITARY COMMISSIONER.)

Harefield Park, Middlesex.

THE war has created a widespread demand for inexpensive structures that can be built up rapidly and promptly moved when required from place to place. These are needed not only for extra hospital accommodation or to house soldiers, but also as temporary workshops, notably for the making of cartridges and the lighter forms of ammunition. Messrs. Humphreys, of Knightsbridge, have been asked to meet many of these new requirements. Thus in 25 days they shipped to France 500 buildings which had been ordered by our Admiralty and War Office.

The possibilities of Humphreys' buildings for hospital purposes have been widely appreciated for some time; before the war over 200 local authorities had availed themselves of these structures for various public purposes, generally for hospitals. Since the war began such buildings have been used for a hospital of 100 beds at Queensferry in Scotland and a Welsh hospital of 200 beds at Netley. The Grand Priory of St. John of Jerusalem has ordered buildings to hold 520 beds, that are now in course of erection on the Boulogne Road, near Étaples, while the Medical Commission of the Australian Commonwealth has purchased 25 of these hospital buildings with room for 500 beds. Not all, but the greater part, of these are already erected amid the beautiful surroundings of Harefield Park, Middlesex. Here an Australian gentleman has handed over a fine old mansion and extensive grounds for use as a hospital for wounded Australians. The mansion was easily converted into the administrative buildings of the hospital. Then, with an eye to economy and to the requirements of their own country, the Australian Medical Commission determined to erect Humphreys' portable buildings because they are not costly and, when no longer wanted, can easily be put into the hold of a ship and sent to Australia. We have thus, within easy reach of London, a good example of what can be done to construct a hospital with these movable structures as well as proof of the rapidity with which it can be done, and an example of the likely cost.

On the day of my visit there were 210 wounded in the newly erected buildings, 11 more arrived while I was there, and 100 new cases were expected in a few days. The great virtue of the system is its elasticity. A big ward may be converted into a little one, a little ward into a big one, or all the wards may be pulled down, packed up in a small space, conveyed to a different part of the country, or across the seas to another part of the world, there to be erected again in the course of two or three days. As far as hospitals are concerned this mobility is just what is wanted to meet the uncertainties of war, the hospitals being used not as substitutes for but as additions to the permanent buildings. Here we are to have a hospital of 500 beds at Étaples. If we are victorious and beat the Germans back to the Rhine the time may come when such a hospital would be much more useful on the outskirts of Brussels or even at Aix-la-Chapelle. If unhappily the Germans advance it might be prudent to remove the hospital further back, nearer to Havre or even to Cherbourg. Surely this is just what is wanted to keep step with the changing exigencies of war.

The material is mostly wood, with light iron rods for girders or framework. The wood is rendered suitable for hospitals by being creosoted, and this is done not merely for sanitary purposes, but to preserve the wood against rain, damp, and destructive insects. For foundation, if the ground is level and firm, it suffices to lay down creosoted wood sleepers 3 in. in width and standing 7 in. up from the ground. If the ground is not quite level the sleepers must be packed up with wooden blocks or bricks when required, or even timber piles may be driven into the ground. In any case, all such obstacles are overcome with comparative ease, because the superstructure is light and therefore does not need very strong or solid foundations. Thus the foundations generally consist of planks placed on the ground like the rafters that form the ceilings of an ordinary house. Across these is laid the floor, which stands a few inches above the ground, leaving space for a constant current of air passing in all directions between it and the earth. But before laying the floor it is necessary to set up the two ends of the building. These consist of six posts, two rafters, and the floor beam. Gable panels slide in between the posts. Each piece of board or each post is exactly the size necessary, and so grooved that every piece fits in with its neighbour, so that all can be put into position rapidly, and will hold firmly when so placed. At a distance of 5 ft. there is another frame which forms the next rib of the building. The word "panel" is used for what goes in between these ribs. Thus there is a panel floor just 5 ft. wide and a panel wall of the same width that fits in between the posts (or ribs, as I prefer to call them, for they are the skeleton or framework of the building). Between these ribs three panels are fitted in: one forms the floor, another the wall, and the third is for the roof. With a duplication on the opposite side the building is complete.

The great point is that we have but one single original operation to perform; all the rest is a mere repetition. Every 5 ft. run is a complete building in itself; it can be added to or taken away from any other 5 ft. of structure. But for hospital purposes there are two models. One is 20 ft., the other is 28 ft. broad. The latter is the more convenient breadth, for it gives space in the middle to allow for a table and seats. Such a ward can be lengthened to any extent, but a total length of 60 ft. is generally preferred. Supposing there were wards assigned to different diseases, each 60 ft. long, and one ward was rarely full, while the other was constantly overcrowded, it would be very easy to take 10 or 20 ft. off one ward and add it to the other.

As the 5 ft. sections of wall, floor, or ceiling fit into one another like shop shutters, anyone without any technical knowledge or practice can erect these buildings. Soldiers or hospital orderlies could easily build up a hospital with the help of one trained supervisor. To remove such a hospital to another place ordinary carts or railway trucks can be employed. The pieces consist of panels 5 ft. wide and 7 to 14 ft. long. The beams are of course longer, and measure from 20 ft. to 28 ft., according to the width of the building. These beams are narrow and pack close together with the rods and posts. It is necessary only to remove the screws and all the parts of the structure can be lifted and carried away. A day's work of ten hours suffices to pull down and two such days to reconstruct the building. If an accident happens or a shell destroys some portion of the structure the damage can be easily and promptly remedied, for every part of the building is standardised, and duplicates are ready in stock to replace any damaged or lost portions.

A further convenience, which doubtless will be considered equal to any as yet mentioned, is the fact that such hospitals or buildings are inexpensive. Counting merely the ward, without anything else, such as administrative buildings, operating-room, kitchens, laundry, &c., the cost amounts to only about £10 per bed. The Australians in this respect escape cheaply, as the mansion of the estate, so generously placed at their disposal, serves very well indeed for the administration buildings. The drawing-room, having bow windows that admit an excellent light, has been converted into an operating-room. As yet, however, very few operations have been performed. Many of the patients have already been under treatment for a considerable time, some in Egypt, others in various English hospitals, and all of them for more than ten days on board the ships that brought them over from the Dardanelles. There is pressure on hospital space in Egypt and Malta, and it is most desirable that those patients who are fit to travel should be sent over to England as quickly as possible, our moderate temperature of England being far more suitable.

The accompanying illustrations show the general appearance and structure of the Humphreys' portable buildings. They have all the advantages of the one-storey pavilion system—that is to say, they stand well apart from each other, though they can be united by a covered way; they are swept above, on all sides, and underneath by the open fresh air. At Harefield they are away from any other dwellings, in a beautiful park, with flowers, magnificent trees, and even the luxury of a small lake in the grounds. Further, they are on a high level, and the air is bracing. To enable the pure air to penetrate inside the wards there is a 5-in. opening between the wall and the roof that runs the whole length and both sides of the wards. At the two ends and above the doors there are louvre windows. Then the ordinary windows on each side of the wards have fan openings

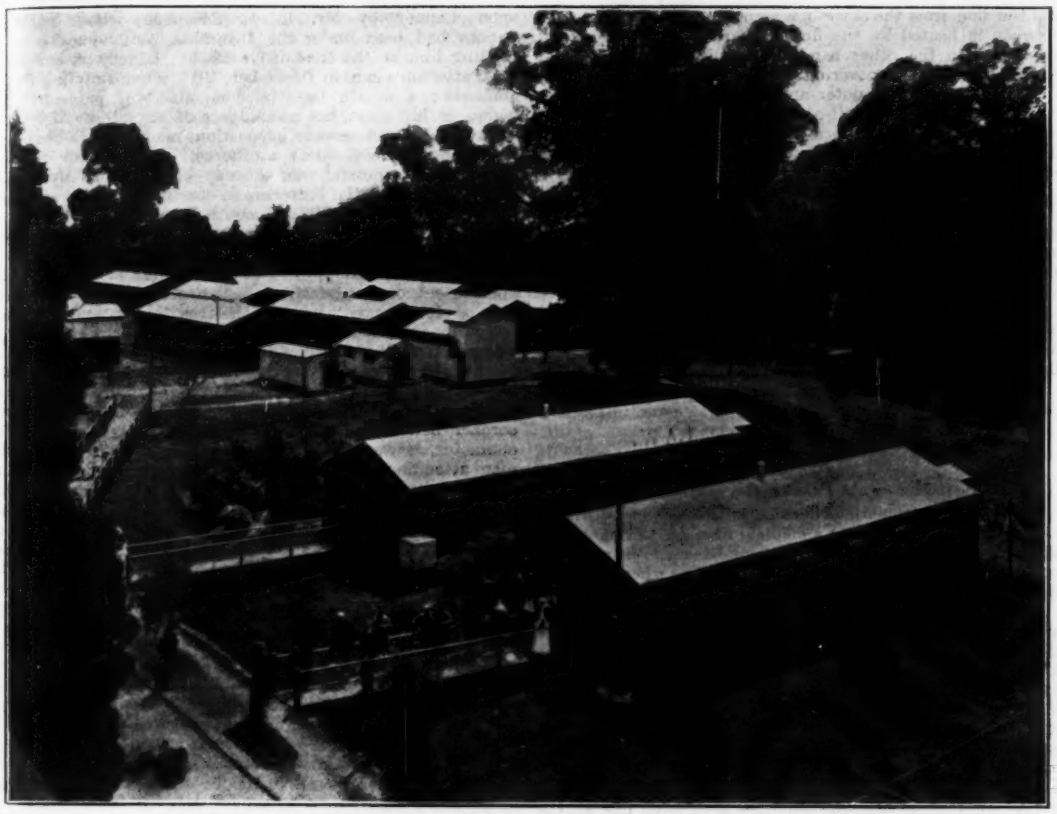


FIG. 1.—Pavilions of the Australian Military Hospital at Harefield Park.

FIG. 2.—Interior view of a ward of the Hospital.

and the flue from the stove has an outer casing. The space between is heated by the flue from the fire and creates an exhaust. On the other hand, to combat excess of heat or cold there is a felt covering within the roof and a 2 in. air space between the outer and the inner boards that constitute the walls. It will also be noted that at the corner outside the pavilions there is a corrugated iron tank, with a tap, to collect rain water from the roof, and this is very soft and pleasant for washing purposes.

Between the wards or pavilions there are many small structures that serve for lavatories, for small kitchens, and other purposes. Then a large pavilion is set apart as a recreation hall, where concerts and various entertainments are given or dinners served. Yet another large pavilion is fitted up as a kitchen, in which more than 500 dinners can be cooked. Very soon everything will be complete, the last pavilion will be erected, and the full complement of Australian wounded will be able to come direct from the Dardanelles to Harefield Park.

MEDICINE AND THE LAW.

Medical Men on the Panel and Garnishee Orders.

THE Court of Appeal has decided in the case of O'Driscoll *v.* Sweeny that fees due to a medical man on the panel and in the hands of an Insurance Committee can be attached under a garnishee order, although at the time when the order is made the precise sum due has not been ascertained. The plaintiff, who had obtained a judgment against the defendant, a medical man on the panel at Manchester, for a sum of £246 and costs, served a garnishee order nisi upon the Manchester Insurance Committee in respect of all debts owing or accruing from the Committee to the defendant. Mr. Justice Rowlatt, who tried the interpleader issue, decided that there was a debt owing or accruing such as would entitle the plaintiff to the order asked for. On other occasions decisions to a like effect have been given, but these have been cases in which, owing to the system of payment by capitation fees, ascertained amounts have been due to the practitioner. The judgment now delivered by the Court of Appeal incidentally affirms the right of creditors to "garnish" sums due to medical men on the panels, but the question particularly argued raised the point whether the Manchester system made a difference as to this, the amount due to the medical man being dependent upon the fees earned and upon the amount available for distribution. Lord Justice Swinfen Eady, in delivering judgment, reviewed the contracts entered into between the medical man and the Committee, of which those subsequent to the first differed from it in the substitution of an unascertained amount for a certain sum, owing to the Manchester scheme of distribution whereby the amounts available for medical benefit are pooled and distributed in accordance with a scale of fees. His lordship was of opinion that at the date when the order was made there was a debt owing from the Insurance Committee to the medical man, not presently payable because the amount was not ascertained, but to which he was absolutely, and not contingently, entitled. It had been urged by counsel that there could not be an attachable debt until the amount was ascertained, and reference had been made to cases in which it was sought to attach unliquidated damages. In such cases there was no debt, but in the present one there was a debt, and the mere fact that the accounts had to be adjusted before the actual amount due was ascertained made no difference. It was not a case where there was a mere probability of a debt as when a person had to serve for a whole quarter before becoming entitled to payment, and might be prevented from serving to the end. In such a case there would only be the probability of a debt accruing. In his opinion the decision arrived at by Mr. Justice Rowlatt was correct and the appeal failed. Lord Justice Phillimore and Lord Justice Bankes delivered judgments in which they concurred.

The Teignmouth Coroner and Post-mortem Examinations.

A dispute which recently took place at an inquest upon the body of a man named William Lancey at Teignmouth has attracted considerable attention. In substance the question arose out of the holding of a post-mortem examination upon Lancey by Mr. R. L. Patterson, whose patient Lancey had been under the Insurance Act, and who was treating him at the time of his death. Lancey came under Mr. Patterson's care in December, 1914, when suffering from influenza; a month later he complained of pains in the region of his heart, but no evidence of anything wrong was discoverable. There were suggestions made at various times that Lancey should select a different medical man on the panel, but no transfer was actually effected. In March he was examined by Mr. Patterson in consultation with another medical practitioner at Teignmouth Hospital, and he afterwards went for a month to Exeter Hospital. He was constantly attended by Mr. Patterson up to the end of June, when he became worse and died. Mr. Patterson, with the consent of the relatives, held a post-mortem examination a few hours after death took place and gave a certificate ascribing it to gastritis and heart failure. This was substantially confirmed by the post-mortem examination afterwards ordered by the coroner, and the verdict of the jury at the inquest was one of "Death from natural causes." The verdict, however, was not arrived at before the coroner had made observations of a wholly unjustifiable character, as we believe, upon the conduct of the medical man attending the deceased in holding a post-mortem examination in the circumstances described. In order to do this it was necessary for Mr. Hacker, the coroner, to assume that the case was one which, as Mr. Patterson should have known, must form the subject of an inquest. He therefore appears to have repeatedly referred to it in the course of his observations as one of "sudden death of which the cause was unknown." It could by no stretch of imagination be treated as a death which was violent or unnatural, and that it was a "sudden" one must have surprised those who heard it thus referred to. The cause was undoubtedly unknown to the extent that the medical attendant of the deceased did not expect death to supervene from the symptoms which he observed during the illness, and that he preferred to confirm his opinions as to the cause of death by holding a post-mortem examination. He also appears to have told the relatives that if he could not confirm his opinions by a post-mortem examination he must decline to certify and leave it to the coroner to say whether there should be an inquest. That a death in the circumstances described is not "a sudden death" is not a point which we desire to labour; we submit it as obvious, only referring to the evidence given before the Departmental Committee upon Coroners and Inquests in 1909, where various aspects of sudden death were considered and where the right to hold a private post-mortem examination without reference to the coroner was fully discussed. The valuable and exhaustive evidence of Mr. J. Brooke Little at that inquiry might be studied by many coroners with advantage. With regard to the case under comment we would refer specially to Question 256 asked of Mr. Little by Dr. W. H. Willcox: "In a case of sudden death, say under a surgical operation, is there any objection to a post-mortem examination being made with the consent of the relatives without the coroner being communicated with?" Answer: "There is no legal objection." We lay stress upon this question and answer, because, in dealing with the conduct of Mr. Patterson, Mr. Hacker seems to have been under the impression that the post-mortem examination held by him if not a criminal act was an indiscretion which came very near to having rendered the offending medical practitioner liable to severe penalties. It was nothing of the kind. The case was one in which the coroner might very well have dispensed with an inquest, and in which it may indeed be doubted whether he had any legal justification in holding one. If he was so justified, it would be rather as a matter of practice than of strict conformity with the terms of the Coroners Act, 1887. In any case, the medical man did not know that an inquest was decided upon or was likely to be held. He had not the smallest objection to an inquest, and no desire to evade one, and if in like circumstances a coroner desires to test the law on the subject he will do so better by causing the medical man to be prosecuted than by uttering vague menaces, which as a matter of law cannot be fulfilled. Mr. W. E. Hempson, instructed by the Medical Defence Union, represented Mr. Patterson and another medical man who had made the post-mortem examination with him, but the coroner did not appear to appreciate the desirability of allowing those whom he desired to censure full opportunity

to be heard as to the action taken by them. In fact, he refused to call the other medical man referred to, Dr. Morton Palmer, and to hear his evidence as to the matters under discussion.

The Case of George Joseph Smith.

The Court of Criminal Appeal has confirmed the conviction of G. J. Smith for the murder of Constance Mundy at Herne Bay by drowning her in a bath. The judgment delivered by the Lord Chief Justice was to the effect (1) that there was a *primâ-facie* case against the prisoner on the facts given in evidence as to the death of Miss Mundy, so that the evidence relating to the deaths of two other women in similar circumstances with whom the prisoner had lived became admissible, and (2) that medical evidence was admissible to show that death could not have been accidental. These were the two main questions of law submitted to the court in a case with the story of which the newspapers have rendered the public familiar under such titles as "Brides in a Bath" and "Drowned Brides." The medical evidence referred to was given by Dr. B. H. Spilsbury and Dr. W. H. Willcox, and was of extreme importance in establishing the guilt of the prisoner, in view of the fact that in the case for which he was being tried there was no evidence that he was present while the unfortunate woman was having her bath. These two witnesses proved the possibility and probability of the murder having been committed in the manner suggested by the Crown, at the same time negativing the probability and, indeed, the possibility of accidental death. The evidence of scientific witnesses called at a murder trial may sometimes not be fully appreciated by a jury. Here, however, it was not a case in which ordinary citizens not trained as chemists or pathologists find a difficulty in following the account of experiments made with rare poisons and in understanding the full bearing of the expert's conclusions. The jury had before them, not only in court but in a private room, the baths in which the crimes had been committed, and were able to estimate in the light of their own good sense and observation the soundness of the views propounded for their guidance. The cumulative effect of the evidence thus submitted to their consideration must have been considerable, and it was open to them to differ from the conclusions arrived at by Dr. Willcox and Dr. Spilsbury if their own intelligence had not satisfied them that those conclusions were correct. That the verdict was the only one open to the jury consistently with truth and justice none can doubt. The murders perpetrated by Smith were crimes of a singularly cruel and audacious character, although no doubt callousness rather than audacity was required after the first occasion had shown him how easy it was to commit the act itself and to evade, for the time at all events, the detection and conviction which at last ensued. In securing the punishment of this very dangerous criminal the evidence of medical witnesses, apart from that referred to above, played a very important part.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

MEETING OF COMITIA.

A COMITIA was held on July 29th, Dr. FREDERICK TAYLOR, the President, being in the chair.

The following candidates having passed the required examination were admitted Members of the College: Jugalkisor Adhya, M.B. Calcutta; Purushottam Tulsidas Patel, M.D. Lond., L.R.C.P.; and Edward Cecil Williams, M.B. Camb.

Licences to practise physic were granted to 113 gentlemen who had passed the necessary examinations.

Diplomas in Public Health were granted conjointly with the Royal College of Surgeons of England to five gentlemen.

A Diploma in Tropical Medicine and Hygiene was granted conjointly with the Royal College of Surgeons of England to one candidate.

On the nomination of the President, the Council, and the Library Committee, the usual election of censors, other College officers, and examiners took place as follows:—Censors: Dr. David Bridge Lees, Dr. George Newton Pitt, Dr. William Pasteur, and Dr. Sidney Harris Cox Martin. Treasurer: Sir Dyce Duckworth, Bart. Emeritus Registrar: Dr. Edward Liveing. Registrar: Dr. Joseph Arderne Ormerod. Harveian Librarian: Dr. Norman Moore. Library Committee: Dr. Cyril Ogle, Dr. Herbert Morley Fletcher, Dr. Thomas H. Arnold Chaplin, and Dr. Robert Oswald Moon. Curators of the Museum: Dr. John Mitchell Bruce, Sir Seymour John Sharkey, Dr. Frederick William Andrewes, and Dr. William Hunter. Finance Committee: Dr. Donald W. C. Hood, C.V.O., Dr. Sidney Philip Phillips, and Dr. James Taylor. Examiners:—Chemistry: Mr. John Millar Thomson and Mr. Thomas Martin Lowry; Physics: Dr. Frederick Womack and Mr. Alfred William Porter; Practical Pharmacy: Dr. Henry Johnstone Campbell, Dr. Robert Briggs Wild, Dr. Frederick Lucien Golla, Dr. Reginald Henry Miller, and Dr. Walter Ernest Dixon; Physiology: Dr. Francis Arthur Bainbridge and Dr. John Mellanby; Anatomy: Mr. William Wright; Medical Anatomy and Principles and Practice of Medicine: Dr. Archibald Edward Garrod, Dr. Hector W. G. Mackenzie, Dr. Frederick Walker Mott, Dr. Alfred George Barrs, Dr. Frank Joseph Wethered, Dr. Raymond H. P. Crawfurd, Sir Bertrand E. Dawson, K.C.V.O., Dr. Alfred Milne Gossage, Sir John Francis Harpin Broadbent, Bart., and Dr. Harold Batty Shaw; Midwifery and Diseases Peculiar to Women: Dr. Herbert Williamson, Dr. Cuthbert H. J. Lockyer, Dr. Thomas George Stevens, Mr. Guy Bellingham Smith, and Dr. John Benjamin Hellier. Public Health: Part I., Dr. Wilfred W. O. Beveridge, D.S.O.; Part II., Dr. Sydney A. Monckton Copeman. Tropical Medicine: Bacteriology, Dr. John Charles Grant Ledingham; Diseases and Hygiene of the Tropics, Dr. Fleming Mant Sandwith. Murchison Scholarship: Dr. John Fawcett and Dr. Alfred Ernest Russell.

The following communications were received: 1. From the Secretary of the Royal College of Surgeons of England, dated May 17th, June 11th, and July 9th, reporting proceedings of the Council of that College on May 13th, June 10th, and July 8th respectively. 2. From the Dean of the Faculty of Medicine, University of Edinburgh, reporting that the Murchison Scholarship had been awarded by the Faculty to Dr. Charles George Lambie.

It was resolved that on the occasion of the Harveian Commemoration on Oct. 18th next the usual dinner should not be held.

Sir Wilmot Herringham was re-elected a Representative of the College on the Court of Governors of Sheffield University. Dr. Sidney Martin and Dr. A. Newsholme were re-elected members of the Executive Committee of the Cancer Research Fund. Sir Thomas Barlow was elected an additional member of the Executive Committee of the Imperial Cancer Research Fund.

A report from the adjudicators upon the essays for the Weber-Parkes prize, 1915, was received. It was resolved that the prize should be awarded to Dr. Noel Dean Bardswell. On the recommendation of the Council the Baly medal was awarded to Dr. F. Gowland Hopkins, F.R.S., and the Moxon medal to Professor J. J. Dejerine, of Paris.

A report was received and adopted from the Committee of Management dated June 23rd, 1915. The report recommended that the following institutions, having fulfilled the requirements of the Board, should be added to the list of institutions recognised by the Examining Board in England for instruction in chemistry and physics: North Eastern County School, Barnard Castle; Bootham School, York; and Queen Elizabeth Grammar School, Wakefield. A second report, dated July 13th, from the same committee was received and adopted. The report was as follows: 1. That St. Chad's College, Denstone, Staffordshire, which is already recognised for instruction in chemistry and physics, be also recognised for instruction in biology. 2. That the examination for the Diploma in Tropical Medicine be discontinued for the duration of the war. 3. That the extra examination in Part I. for the Diploma in Public Health, held during recent years in the month of April, be discontinued for the duration of the war.

After some further formal business, the PRESIDENT dissolved the Comitia.

THE subscriptions to the Edinburgh Red Cross Fund amounted last week to £719 7*s.* 10*d.*

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE undermentioned has been granted a temporary commission as Surgeon-General in His Majesty's Fleet: Arthur Edmunds (dated June 17th).

The following have been granted temporary commissions as Surgeons in His Majesty's Fleet:—Dated July 23rd: John Prescott Johnson and Malcolm Bonar Macleod. Dated July 24th: Kenelm Mitchell Dyott. Dated July 26th: Frederick Charles Gladstone and Arthur Leslie Blunt. Dated July 28th: Alexander William Gunn and Digby Arthur Pebody Clarke.

The following appointments have been notified:—Surgeon: A. J. Patterson to the *Victory*, additional. Temporary Surgeons: R. M. Dannatt and J. Smith to the *Vivid*, additional, for Plymouth Hospital; and W. S. O'Loughlin to the *Victory*, additional, for Haslar Hospital.

ROYAL ARMY MEDICAL CORPS.

The undermentioned are granted temporary rank whilst employed at the Brook War Hospital:—Dated June 12th: Lieutenant-Colonel: John Beuzeville Byles. Major: Eliot Swainston and Hamilton Irving.

Sir David Hardie, from temporary Major, to be temporary Honorary Lieutenant-Colonel whilst serving with the Australian Voluntary Hospital (dated July 19th).

Harold Andrew Kidd to be temporary Lieutenant-Colonel whilst employed at the Graylingwell War Hospital (dated April 1st, 1915).

The undermentioned to be temporary Majors whilst employed at the Graylingwell War Hospital:—Dated April 7th: William Pearson. Dated April 8th: James Laidlaw Maxwell.

Major Arthur E. Smithson is retained on the Active List, and to be supernumerary (dated July 29th).

The undermentioned to be temporary Captains:—Dated April 16th: Temporary Lieutenant Augustus W. Addinsell. Dated July 13th: Edward Reginald Tweed, late Surgeon Captain, 3rd Battalion, The Devonshire Regiment. Dated July 31st: Temporary Lieutenant Charles J. Edgar.

The undermentioned having ceased to be employed with the Australian Voluntary Hospital relinquish their temporary honorary commissions:—Dated July 12th: Lieutenant-Colonel Sir Alexander MacCormick and Captain Herschell L. L. Harris.

George Augustus Paul is granted the temporary honorary rank of Captain whilst serving with the Australian Voluntary Hospital (dated July 24th).

Temporary Lieutenant James Smith relinquishes his commission (dated July 16th).

The undermentioned to be temporary Lieutenants:—Dated July 10th: Hermann Rogers-Tillstone, Breadalbane Blacklock, Norman McConnell Boyce, Joseph Aloysius Mescall, Joseph Victor Cope, Andrew Climie, David Whyte, Frederick Arthur John Robertson Brooke, Alexander McEwan, Murray Babington Stuart, William Murray Thomas, and Charles James West. Dated July 12th: Geoffrey Allen Upcott-Gill, John Frederick Wolseley Leech, and Cecil Francis Nicholas. Dated July 13th: Ernest Douglas Wolff, Hamilton William Dyke, and Harold West Hodgson. Dated July 14th: William Franklin O'Regan, Edward Charles Cunnington, Hubert Hodge, Alexander Gibb Glass, Charles Devereux Pile, and Henry Croly.

INDIAN ARMY RESERVE OF OFFICERS.

The King has approved the grant of the temporary rank of Lieutenant in the Indian Medical Service to the undermentioned:—Dated Jan. 4th: Shapurji Hormasji Modi, Vinayak Balvant Gokhale, Ali Azhar Hasanally Fyzee, Jehangir Edalji Spencer, Rustom Kershasp Dadachanji, Shrinivas Vithal Kirtane, Framji Sorabji Master, Sorab Dinsha Billimoria, Kowasha Kharshedji Mehta, J. Nasarvanji Hormasji Choksy, and Bailey Glemice Valerie Dias. Dated Feb. 12th: Ramrao Narayen Ajinkya. Dated May 8th: Upendra Nath Banerjee, Phanindra Krishna Gupta, Nilratan Chatterjee, and Pramatha Nath Ghosh. Dated May 10th: Alexander Dias. Dated May 11th: Vinayak Narayan Agate. Dated May 13th: Sarat Chandra Mitra. Dated May 14th: Cuthbert Edward Rohan Norman. Dated May 15th: Ram Chandra Malhotra. Dated May 17th: Homi Shiavex Dastur and Rustom Burjorji Spencer. Dated May 18th: Devendra Bharadwaja, Balajipetah Sesha Chalam, and Framroze Manackji Vajifdar. Dated May 20th: Samarendra Lal Mitra. Dated May 21st: Henry Aung Khin and Shridhar Chintaman Jog. Dated May 25th: Pirojsha Merwanjee Antia and Manseekjee Merwanjee Cowasjee. Dated June 4th: Braj Bushan Kapila.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Lieutenant (on probation) William McE. Snodgrass is confirmed in his rank.

Cadet Sergeant Thomas Yuille Barkley and Cadet John Scaife Armstrong, from the Edinburgh Contingent, Officers Training Corps, to be Lieutenants (on probation).

TERRITORIAL FORCE.

Royal Army Medical Corps.

1st Highland Field Ambulance: Roderick Reid Macnicol (late Captain, 8th (The Argyllshire) Battalion, Princess Louise's (Argyll and Sutherland Highlanders)) to be Captain (temporary).

3rd Home Counties Field Ambulance: Lieutenant Michael A. Curry relinquishes his commission.

1st London (City of London) General Hospital: Captain Thomas J. Horder is seconded. Neville Samuel Finzi to be Captain, whose services will be available on mobilisation.

4th London General Hospital: Captain Herbert S. Clogg is seconded. Major Alfred H. Tubby and Captain James P. Stewart are seconded.

2nd London (City of London) General Hospital: Major Charles H. Fagge is seconded while in charge of the Hampstead Military Hospital.

3rd London General Hospital: Captain Vincent W. Low is seconded.

1st South-Western Mounted Brigade Field Ambulance: Captain Charles W. Edwards, from Attached to Units other than Medical Units, to be Captain.

1st East Anglian Field Ambulance: Major Gerald M. Hetherington to be temporary Lieutenant-Colonel. John Edward Brooks and Simmon Dickson Graham to be Lieutenants.

1st East Lancashire Field Ambulance: Lieutenant Robert S. Young, from the Territorial Force Reserve, to be Lieutenant.

2nd East Lancashire Field Ambulance: Lieutenant-Colonel William R. Matthews, from 3rd East Lancashire Field Ambulance, to be Lieutenant-Colonel (temporary).

1st West Lancashire Field Ambulance: Captain Mitchell I. Dick, from 3rd West Lancashire Field Ambulance, to be Captain.

1st Eastern General Hospital: Henry Anstey Cookson to be Captain, whose services will be available on mobilisation.

3rd Western General Hospital: Joseph Lloyd and Evan William Richards to be Lieutenants.

Attached to Units other than Medical Units.—Lieutenant William Marley-Cass to be Captain. John de Ville Mather to be Lieutenant.

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

The April issue of the *Journal of the Royal Army Medical Corps* just to hand contains several articles of topical interest, including Observations on Injuries of the Bones of the Limbs by the S. Bullet (Spitzgeschoss), contributed by Major Sir John Bland-Sutton, R.A.M.C.(T.), and Cases of Nervous and Mental Shock Observed in the Base Hospitals in France, by Dr. William Aldren Turner. Lieutenant-Colonel G. G. Nasmith, commanding the Canadian Mobile Laboratory with the British Expeditionary Force, describes a Mobile Filter of Large Capacity Suggested for Use in the British Army, and Captain W. R. Galwey describes Experiments on Sterilisation of Water for Drinking Purposes in the Field by Means of Chemicals. Lieutenant A. W. Hendry and Lieutenant E. L. Horsburgh contribute Some General Notes on Suffocation by Poisonous Gases, with detailed notes on one fatal case, and Lieutenant M. K. Acheson suggests Carbolic Acid Dissolved in Paraffin Oil as a Means of Preventing Sepsis in Gunshot Wounds, his experiments in the matter having been undertaken as a result of the publication of Sir W. Watson Cheyne's oration in THE LANCET of Feb. 27th. By-paths of Evolution is the title of an interesting article by Colonel R. H. Firth.

LONDON INTERCOLLEGIATE SCHOLARSHIPS BOARD: MEDICAL SCHOLARSHIPS.—The following recommendations have been made by the board on the report of the examiners. The awards are subject to confirmation by the governing bodies of the colleges concerned. University College: Bucknill scholarship, Jal Pestonji Padshah, University College; two Exhibitions, Henry Lewis Heimann, Guy's Hospital, and Arthur Brian Saunders, University College. King's College: Warneford scholarships, Alan Christopher Perkins, Westminster School, and Henry Nathan Warner Collins, University College. London (Royal Free Hospital) School of Medicine for Women: St. Dunstan's Exhibition, Phœbe Myfanwy Phillips, North London Intercollegiate School; Isabel Thorne scholarship, Dorothy Maud Kemp, City of London School, and (*proxime accessit*) Violet Elizabeth Mary Mizen, Streatham College; Mabel Sharman Crawford scholarship, Norah Dorothy O'Flyn, University College, Cardiff, and (*proxime accessit*) Hilda Treloggen Haggett, University College, Bangor.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Certification of Insured Persons in Ireland.

FOR the past two years the attempt to work the Insurance Act in Ireland without the coöperation of the medical profession has been strenuously made, part-time medical certifiers being appointed to sign certificates under the Insurance Act, to the exclusion of the medical attendants of the insured. The system has broken down in every respect. The insured have not been enabled to get the benefit to which they were entitled, and, on the other hand, the Approved Societies have had little protection against determined malingerers. The medical profession was excluded from work under the Act, and partly in consequence of this the sanatorium benefit has to a great extent failed to accomplish its object. The services required of the medical certifiers were unprofessional in character, and medical men of standing in the profession were not willing to accept office, while the inherent difficulties of the scheme were increased by the incapacity of certain of those who had to carry it out. For months past protests against the plan of the Commissioners have been made by all sorts of bodies—boards of guardians, who found their duties rendered more difficult; political bodies, interested in the rights of the insured; and Approved Societies, who had no confidence in the advisers appointed by the Commissioners. The general body of the medical profession from the beginning gave the scheme an uncompromising opposition. The Irish Royal Colleges of Physicians and Surgeons not only declared the scheme unsatisfactory in that it excluded from consideration the most trustworthy evidence of sickness—that of the medical attendant—but they declared that the manner in which the certifiers in certain districts performed their duties was unprofessional and even deserving of reproof. A similar expression of opinion was conveyed to the Insurance Commissioners by the General Medical Council. The Government seems at length to have admitted the cogency of all this criticism, and has promised to put an alternative scheme before the Irish medical profession at an early date. A deputation from the Irish Medical Committee, representing the medical profession of Ireland, recently had an interview with Mr. Charles Roberts, M.P., representative of the Insurance Commissioners in Parliament, and, though no details of the scheme are yet made known, it is believed that a satisfactory settlement of the long dispute is in sight.

Dispensary Medical Officers and the War.

The number of dispensary medical officers who have offered their services to the Royal Army Medical Corps is considerable, and, on the whole, both the Local Government Board and the several local boards of guardians have treated applications for war leave generously. There has been no uniformity, however, in the arrangements made as to pay and leave. In some cases the guardians have not only paid the officer on leave, but also his deputy; in others they have given the officer on leave half-pay and paid his deputy; while in others, again, they have given the officer full pay, but asked him to provide and pay a deputy. Again, in some unions the strain on the guardians has been much heavier than in others, owing to a large number of officers volunteering for service. It is felt that the Local Government Board might properly advise the adoption of a uniform system in all cases where an officer applies for war leave. If dispensary medical officers knew exactly the conditions under which leave would be granted more would be ready to offer their services. Boards of guardians would, in most cases, be willing to accept the advice of the Local Government Board in a matter of this kind.

Royal National Hospital for Consumption for Ireland.

The twenty-third annual general meeting of the Royal National Hospital for Consumption for Ireland was held in Dublin on July 29th, Major E. H. C. Wellesley, J.P., chairman of the board of governors, being in the chair. The chairman said that the war had depleted the staff, had caused a falling income, increased the cost of maintenance and anxiety as to the future, but since the last annual meeting the number of beds had been increased to 125. The authorities had received an offer of 25 beds for soldiers discharged from the army suffering from tuberculosis and other cases were still being received from Insurance Committees throughout Ireland, some for contract beds. It was a cause for regret that some cases were far more advanced than the board contemplated admitting in the earlier stages of the institution. Of the total number of patients discharged during 1914, exclusive of those in whom no diagnosis of consumption could be made, 15·5 per cent. were "very much improved" or "apparently cured," 20·7 per cent. "much improved," 21·2 per cent. "improved," 37·3 per cent. "*in statu quo*," 3·1 per cent. worse, and 2·2 per cent. died. Patients are not considered "very much improved" unless they have lost all their physical signs and have been proved after several examinations to have no tubercle bacilli in their sputum. It has always been the custom at the institution not to consider cases without tubercle bacilli in their sputum as cases of consumption. Professor E. J. McWeeney, a member of the board, said that had the diagnosis of consumption not been restricted to the cases with bacilli in the sputum the figures would have come out still better. He had always maintained that with the appearance of bacilli in the sputum a somewhat advanced stage of the disease was entered upon—a stage in which the ultimate issue of the treatment must be doubtful. His view was that every effort should be made to diagnose consumption before the bacilli appeared. This could be accomplished by refined clinical methods, including the injection of tuberculin. These were the cases that responded really well to sanatorium treatment, and it was a great pity to see so many patients in the incurable stage sent in by the Insurance Committees. The board expressed its indebtedness to Dr. C. D. Hanan and Dr. F. Crosbie, their former resident medical officers (who had joined the services, and whose places had been taken by Dr. Kennedy and Dr. Gordon), to Miss Taylor, the lady superintendent, and to the nursing staff generally. The board also expressed their thanks to Dr. W. M. Crofton, the visiting physician, who, it was stated, had been entrusted by the Research Committee under the National Insurance Act with important research work on the chemo-therapy of tubercle, and the hope was expressed that the trials which were being made on animals of new antiseptic compounds would soon yield results that might be applied to the treatment of the disease as it occurs in human beings.

Dispensary Doctors' Salaries.

At a meeting of the Lisburn board of guardians held on July 27th a communication was received from the medical officers of the union requesting the board to fix a graded scale of salaries, on the

grounds that they had not been increased for 50 years, that the cost of living had greatly increased, that travelling expenses were higher, and that recent legislation had almost doubled the work. The matter will be considered at a special meeting of the board.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Emetine in Acute Respiratory Affections of Children.

M. Méry has reported to the Société Médicale des Hôpitaux a series of cases which seem to make it clear to him that emetine injected in doses of 1 cgm. at the age of 1 year, rising proportionately up to 4 cgm. in the adult, lowers the temperature, renders the secretions fluid, rapidly lessens congestion of the lungs, and has no weakening action. These injections have been renewed for several days running in cases of broncho-pneumonia, pneumonia, and capillary bronchitis, without any untoward happening.

The Sigaut Prize.

The Secrétaire Perpétuel of the Académie de Médecine has been authorised to accept in the name of the academy a legacy from Dr. M. Sigaut of 8000 francs, the interest to be used to establish a prize to be known as the Dr. Max Sigaut prize. It is to be awarded every two years for the best memoir on early diagnosis and the best treatment in cancer of the digestive tract.

The Soldier's Wine Ration.

At the Paris Academy of Medicine M. Vidal has asked for a resolution demanding the regular distribution as far as possible to all soldiers with the colours, whether in garrison or at the front, of a hygienic beverage—wine, cider, or beer—during meals. Professor Landouzy called attention to the fact that for a long time he had pointed out the defects of the alimentary ration of the French soldier, a ration which was calculated the same for all arms without allowing for the differing needs of men of different weight, a ration which comprises too much meat and not enough carbohydrates. The addition of a suitable proportion of wine to the daily ration appeared to him an excellent method to equalise the insufficiency and the defects in composition of the existing ration.

Typhoid Statistics of the Army.

Statistics indicate that the sanitary condition of the French army is particularly satisfactory. No epidemics have appeared, thanks to the knowledge and strict application of the fixed laws of hygiene. If a few isolated cases of typhoid fever appear it is because those who are attacked have not been protected by vaccination, or have been vaccinated in an unsatisfactory manner as to quantity or method of application. In the early months of the war, moreover, since preventive vaccination had not yet been made general, and numerous cases were presenting themselves in the infectious hospitals, it was thought that cases of typhoid fever had been found in those who had been vaccinated. This was not so. These cases have been found to be paratyphus, and they are the result of a microbe entirely different from that of typhoid fever. Sometimes typhus fever has been confused with typhoid or paratyphoid fever, and against typhus fever no vaccine has been found, but this fever seems to have largely disappeared from the western front in the present war, and no case of it has been seen in France according to official figures, though individual accounts do not agree here.

Correspondence.

"Audi alteram partem."

AMPUTATIONS FOR GANGRENE.

To the Editor of THE LANCET.

SIR,—Among the many difficult problems which surgeons have been confronted with in this war none are of greater importance than the best methods of amputation in cases of sloughing and cellulitis or actual spreading gangrene. Some authorities have lately revived the ancient practice of cutting the limb straight through, leaving no flaps whatever. We have recently had some of these cases at Exeter and the results are very unsatisfactory, necessitating tedious skin grafting, leaving at best a poor unsound stump, or actual re-amputation. I hesitate to veto or condemn a practice which has been advised by leading men. But I fearlessly assert that this amputation, if done at all, should be reserved only for pronounced cases of spreading gaseous gangrene. I have reason to believe it has been performed for other conditions, when I can hardly believe it is ever needful.

The drainage of septic serum from a swollen and enormously œdematous limb is effected very perfectly if the flaps are left open. I have had experience of this and speak confidently. The amputation should be done well away from the damaged parts. In cases of gunshot injury, crushes, and the like, the damage to the soft parts extends much higher than is apparent. Many disastrous results are due to the anxiety of the surgeon to preserve parts which appear to him sound. The flaps should be cut thick, with substantial muscular bases, to preserve the nutrient vessels. And it is of special importance that the soft parts be well retracted and the bone sawn high up. The shrinkage in these cases is remarkable, and very apt to lead to after-protrusion of bone. The sutures should be passed and knotted at the ends, but not tied, and the stump wrapped in warm fomentations of boric or saline fluid, often renewed. Elevation of the stump should be adopted if possible. The drainage of serum is copious and immense. The flaps shrink markedly. Should the patient survive the cut surfaces will "glaze," and the sutures can then be tied. Even if parts of the flaps slough, there is still some covering from which subsequent healing may ensue. I have no hesitation in recommending this practice.

All allowance must be made for the difficulties of amputations done in haste, perhaps in danger, and by a surgeon embarrassed by crowds of wounded men. But I believe the main recommendation of the operation of "Antyllus" is the ease of its performance. And though this somewhat prehistoric surgery may be justifiable, say, for a ship's carpenter acting in emergency, it can hardly be advised to a modern surgeon unless under the most exceptional circumstances. I write in no carping or critical spirit. The matter is a very serious one. It must be remembered that our younger surgeons at the front have not experience to guide them; they are largely guided by what they read. The subject is eminently one for a pronouncement by the consultants on active service. We are all anxious to spare the brave men fighting for our existence all needless suffering.

I am, Sir, yours faithfully,

A. MARMADUKE SHEILD,
Consulting Surgeon to St. George's Hospital.

July 30th, 1915.

THE DENTAL NEEDS OF THE ARMY.

To the Editor of THE LANCET.

SIR,—Since I wrote my last letter I see that Sir J. D. Rees in Parliament has obtained from the Under Secretary for War a clear statement that there is no army dental corps and no need for one. I propose to give my reasons for believing that our army in France is in great need of a dental corps. When the medical history of this war is written two of the chief features will be the comparative absence of the epidemics which used to devastate armies and the prevalence of dental disorders. I attribute the improved general health of the army to the work of the medical service and the dental disorders to their neglect of the teeth. The attempt to do without a dental corps is as serious an error as saying that we have no Royal Army Medical Corps in France and there is no need for one.

And now let us examine how the War Office is trying to get the dental work done in France without a corps of their own. They are attempting to utilise the local practitioners, but it must be remembered that the French have already mobilised nearly every useful Frenchman, and one might as well try to form an English Royal Army Medical Corps out of what is left. In the second place, they have sent out a certain very limited number of dentists with the temporary rank of lieutenant. Perhaps it is the War Office alone who could tell us how few these men are, but they are certainly quite unable to deal with the present or coming requirements of the army. They are in about the same position in which a group of Royal Army Medical Corps lieutenants would be if sent over to France to attend our army and to do the work in their own sweet way under the control of a dental surgeon. Evidently something more is wanted, and it has been suggested that the medical officers should do the dental work. My belief is that they could undertake most of the extractions as we arranged in Rouen, but they have their hands full of their own work and need all the help they can get from the civilians, and certainly this is not the moment for them to go into training as dental specialists; still they can extract the soldiers' teeth.

There is, however, another little point to consider: Why do we never speak of our officers' teeth? Good dentistry may be a luxury for the soldiers, but it is a necessity for the officers, many of whom have been best part of a year in France already. A winter campaign seems probable. The nights will soon be getting cold, and large numbers of officers will suffer severely from neuralgia, as they did in the South African War. They will not all be within reach of a base, and even if they were I have already shown that the French dental surgeons are mobilised. England sleeps whilst other countries are moving. Canada leads the way with a special army dental service. France has already woke up. Germany is making in her army dental appointments that she has never made before. A very large English army is said to be coming to France, where insufficient arrangements are made for the care of the teeth both of officers and men, and it is to be hoped that the British lion will not be incapacitated with neuralgia just when he wanted to be in his best fighting trim.—I am, Sir, yours faithfully,

F. NEWLAND-PEDLEY, F.R.C.S., L.D.S. Eng.

Samois, France, July 26th, 1915.

THE TREATMENT OF WOUNDS.

To the Editor of THE LANCET.

SIR,—The great divergence of opinion amongst surgeons and pathologists at the present time as to the best treatment of suppurating wounds is very unfortunate and discouraging. With so many wounded soldiers under our care, nearly all of whose wounds are suppurating, we are all of us seeking the best method of dealing with these septic wounds, and as yet there is no certain information. There does not seem to be any serious difference of opinion as to the urgent need for the thorough disinfection of gunshot wounds immediately after their infliction, but they are often such deep and tortuous tracks, blocked by protruding portions of torn muscle, that even if there were sufficient time the difficulty of disinfecting them would be great, though I think it is generally agreed that every possible means ought to be taken. But we are told by those at the front that unfortunately when there is a rush of wounded after any serious engagement there is no time thoroughly to deal with them, and the wounded may not arrive at any place where they can be adequately dealt with for a great many hours after the infliction of the wound. Hence practically all lacerated gunshot wounds which arrive in this country are freely suppurating, and within a few days of their infliction, before they come over, most serious complications sometimes arise. In fact, the surgery of the present war has taken us back to the pre-Listerian time which many of us can remember, only many of these gunshot wounds are much more terrible than the wounds we had then to deal with in civil life, and their profuse suppuration is therefore even more serious. But though a marked degree of hectic temperature is not rare in the bad cases, yet fortunately definite pyæmia and septicæmia do not seem common.

Will the use of a solution of hypochlorous acid, which Professor Lorrain Smith has shown[1] to be the strongest antiseptic we possess, and capable of killing the spores of anthrax in a few minutes, in a strength which does no harm to the wound, make it more possible to disinfect these gunshot wounds? Even if the action of the antiseptic is hindered by the presence of the organic matter in the wound, if it will so quickly kill anthrax spores, which are so resistant to most antiseptics, may it not be able, perhaps in a somewhat stronger solution (but a solution even then probably non-injurious to the tissues), to kill the spores of those anaerobic organisms which so seriously infect some gunshot wounds? And if it cannot do this, may it not kill all the more common pyogenic organisms, even after many hours from the infliction of the wound? And may not the application of the hypochlorous acid gas generating pad, as a first dressing, do, at any rate, something to inhibit the growth of organisms until the wound can be thoroughly disinfected? But the difficulty in the use of gases, and ointments, and powders is that they do not really penetrate into the depth of a deep and tortuous track.

But it is with regard to the treatment of already suppurating wounds that there is such a serious divergence of opinion. We are told by Sir Almroth Wright[2] that it is useless to apply an antiseptic to a suppurating wound, as it cannot penetrate the living granulation tissue or the leucocytes, and

[1] Brit. Med. Jour., July 24th, 1915, p. 405.
[2] THE LANCET, April 24th, p. 843.

that if it did penetrate the granulation tissue it would be absorbed by the blood or washed out by the lymph; and, moreover, we are also told it may do harm by paralysing the phagocytic action of the leucocytes. He advises us to use not antiseptics, but saline solutions of a certain strength, which will encourage the outflow of lymph and so bring active phagocytes to destroy the organisms. On the other hand, Sir Watson Cheyne tells us [3] that he considers Sir Almroth Wright over-estimates the value of lymph as a bactericide, and does not recommend the use of this strong saline solution. But he is very strongly of opinion that antiseptics do harm in suppurating wounds, because they interfere with the antibacterial action of the tissues, and he quite agrees with Sir Almroth Wright in his view that they have no power to deal with organisms which have already penetrated into the tissues around the wound—the wall of the wound.

The very remarkable series of experiments of Mr. C. J. Bond [4] have shown that quite strong antiseptics do not interfere with the healing of a recent operation wound, and therefore that there is no ground for the terrible fear of the entrance of antiseptics into wounds at operation which many surgeons suffer from. But it also makes one sceptical as to whether, after all, antiseptics really do such damage to the living tissues and cells as to interfere with their antibacterial action in suppurating wounds. In THE LANCET of July 24th, p. 165, is a paper by Dr. Paul Fildes and others strongly advocating the treatment of suppurating wounds by a very powerful antiseptic solution, and instead of injuring the granulation tissue we are told that it becomes remarkably healthy and the wounds heal well. Whether suppurating wounds would really do better treated with this strong antiseptic, or simply washed out with saline solution of the strength recommended by Sir Almroth Wright, or with normal saline solution, must, I think, be doubtful. It would require very careful and extensive observation to determine, but it is evident from the experience published by Dr. Fildes that a strong antiseptic does no more harm in a suppurating wound than, as has recently been shown, it does in a recent aseptic one. I have been treating cases of profusely suppurating gunshot wounds—many of them compound fractures—by syringing them out, or by continuous irrigation with Wright's saline solution, and most of them have done very well; but I have not made an extensive or systematic trial of Wright's method, and cannot, therefore, publish any reliable results. We all, of course, carry out what Sir Almroth Wright so strongly advocated—the freest possible drainage and washing out of the pus, and, if needful, continuous irrigation, but this cannot be considered as Wright's method, as it has been one of the primary principles of surgery for many years. In the *British Medical Journal*, also for July 24th, p. 129, is another paper by Professor Lorrain Smith and other pathologists at Edinburgh strongly recommending the use of hypochlorous acid for septic wounds. They claim that the purulent discharge becomes serous and that the wounds "clean" and heal well. Evidently here again no harm is done by the introduction of a strong antiseptic into a suppurating wound.

There is one statement made by Sir Almroth Wright which seems to me remarkable.[5] He says that although he does not consider antiseptics do any good to the wound to which they are applied, yet their application does good inasmuch as it prevents the transference of organisms from one wound to another. But surely it is not desirable to apply antiseptics to a wound for this purpose, nor can we expect a weak antiseptic applied to the wound for a few minutes to act as an efficient bactericide and prevent such transference. All instruments should be boiled between the dressings, all swabs discarded, fresh lotion used, and if gloves are not changed, at any rate the gloved hands should be thoroughly washed.

Although Dr. Fildes and the other authors of the paper in THE LANCET say that they have arrived at a somewhat different conclusion from that of Sir Almroth Wright, yet they state, with regard to his recent address on wound treatment, that there are few passages in the paper to which they are disposed to take exception. It seems to me that their treatment of suppurating wounds is entirely different both in theory and practice to that of Sir Almroth Wright's. He asks (p. 845), "how is it that the obvious non-success of the antiseptic treatment is not generally appreciated." The authors of this paper advocate such treatment and show that in some wounds at any rate it is successful. It is true that though in Sir Almroth Wright's address at the Royal Society of Medicine, from which the above quotation is taken, he tried to prove that not antiseptic, but "physiological," methods were the right treatment for suppurating wounds, yet in a joint communication on the subject (page 876 of the same number of THE LANCET) he considers the possibility that an antiseptic may be some use in a suppurating wound, and thus seems to be less confident in his opinion, yet he sums up the observation by saying ..... "up to the present, experiment has not furnished anything in confirmation of the idea that the introduction of an antiseptic into wounds would be likely to contribute to the arrest of suppuration."

I cannot understand the reasons for the opinion of Dr. Fildes and the other authors of the paper that "an antiseptic as a primary method of treatment must fail." By "primary method" they must obviously mean at the time of the injury. They say it is useless to expect an antiseptic applied to the superficial aspect of a wound to disinfect the deep part. This is, of course, obvious. But why should not the antiseptic be applied to the deep part also? If some time is spent over the attempt, and, if necessary, an anæsthetic given, and the tracks opened up, a powerful antiseptic may be injected into all its recesses. Extensive compound fractures, with great laceration of surrounding tissue, in civil practice may be sterilised in this way. I was greatly surprised when some months ago I read Sir Almroth Wright's reason for thinking it was impossible to sterilise recent gunshot wounds.[6] He says that in the ordinary compound fracture of civil life microbes lie exposed on the extruded surface of the bone, which has been thrust through the skin and so can be readily killed, but that this condition is very different from a gunshot wound in which they are buried deeply in the tissues. But Sir Almroth Wright seems to have no conception of the ordinary compound fracture of civil life. The bone does not often protrude through the skin when the case comes before the surgeon for treatment, and whether it does or does not, there is often an extensive deep lacerated wound, and the

[3] THE LANCET, May 8th, p. 961; and Brit. Med. Jour., 1914, vol. ii., p. 870.
[4] Brit. Med. Jour., 1915, vol. i., p. 405.
[5] THE LANCET, April 24th, 1915, p. 876.
[6] Ibid., p. 843.

disinfection of this may demand much care and thoroughness, and yet such a wound may be quite successfully sterilised by a strong antiseptic.

I am Sir, yours faithfully,

Bristol, July 25th, 1915. CHARLES A. MORTON.

P.S.—As will be seen from the date of this letter, it was sent to the Editor of THE LANCET before Sir Watson Cheyne's paper, and the leading article on the same subject, appeared in THE LANCET of July 31st. I very greatly regret to find I was wrong in thinking there was a general agreement that a most thorough attempt should be made to disinfect all these lacerated gunshot wounds at the earliest possible moment. I recognised, as I say in the letter, that the case might not arrive at a clearing station in time, or the rush then might be too great, for the successful disinfection of all the wounds, but I imagined every endeavour was made to do this. I thought that those who were not convinced that this was the best thing to do before reading Sir Watson Cheyne's remarks on the subject in his address at the Medical Society last autumn, and since, were now convinced. Perhaps the encouraging experience of Mr. Edmunds in the Dardanelles may lead to the more general adoption of the practice.

July 31st.

THE RECOGNISED PLACES OF CLINICAL STUDY.

To the Editor of THE LANCET.

SIR,—I am directed to forward you the enclosed copies of correspondence, with a request that you will be pleased to publish them in your columns. The first letter is one addressed to the three examining boards in London; the replies to that letter follow.

The request made by the West London Hospital appears to be reasonable and of urgent necessity in these days of war emergency. One examining board recognises this emergency and grants the request; the other two refuse it, and, perhaps wisely, state no reason for their refusal. Emergency has cut much red tape of late; even trade union rules have gone. But our examining boards still "bind heavy burdens and grievous to be borne, and lay them on men's shoulders, but they themselves will not move them with one of their fingers."—I am, Sir, yours faithfully,

N. BISHOP HARMAN,
Vice-Dean, Post-Graduate College, West London Hospital, Hammersmith.

July 20th, 1915.

[ENCLOSURES.]

Post-Graduate College, West London Hospital, Hammersmith, June 19th, 1915.

DEAR SIR,—Owing to the necessity for releasing medical men of military age there is increasing difficulty in obtaining the necessary skilled assistance for the satisfactory working of general hospitals. The difficulty has been acutely felt at the West London Hospital. At the present time we are able in some degree to meet it by obtaining the assistance of senior students who are as yet unqualified, who work under the direction of the resident medical officers as dressers for surgical cases. These men are paid for the work and found in board and lodging. To make this work really suitable for them without delaying the date at which they would ordinarily be able to proceed to their final examinations, I am authorised to make application to you for the official recognition of this hospital as a place of clinical study for men who have passed their intermediate examination. The hospital is at present recognised as a place of study for post-graduates and for men reading for higher professional qualifications. There is ample clinical material of all kinds, and full facility for personal teaching by the staff, both resident and visiting. We have at the moment two men acting as dressers in the surgical wards, and I shall be glad if your council will be pleased to grant the request made in this letter, that you will make it retrospective so as to apply to these two men. The application for this recognition is for the duration of the war only.

I am, yours faithfully,
(Signed) N. BISHOP HARMAN, Vice-Dean.

Examination Hall, 8–11, Queen-square, Bloomsbury, London, W.C., June 24th, 1915.

DEAR SIR,—I have submitted your letter of the 19th instant to the Committee of Management of this Board, and I am desired to inform you that they do not see their way to comply with your request.

I am, dear Sir, yours faithfully,
(Signed) F. G. HALLETT, Secretary.

N. Bishop Harman, Esq., F.R.C.S.

University of London, South Kensington, London, S.W., July 15th, 1915.

DEAR SIR,—I regret to inform you that, after consideration of your letter of June 19th last, making application for the temporary recognition of the West London Hospital for clinical study for the purposes of the M.B., B.S. examination, and of reports thereon from the relevant Committees of the Senate, it was resolved by the Senate at their meeting on 14th July, 1915, that the application be not acceded to.

I am, dear Sir, yours faithfully,
(Signed) P. J. HARTOG, Academic Registrar.

The Vice-Dean, Post-Graduate College, West London Hospital, Hammersmith, W.

Society of Apothecaries of London, Blackfriars, London, E.C., June 24th, 1915.

DEAR SIR,—I am requested to inform you that the Court of Examiners are willing to recognise work done at the West London Hospital for clinical teaching during the war "for students who have passed their examination in Anatomy and Physiology."

Would you be good enough to send me the names of the two students who are acting as dressers?

Yours faithfully,
(Signed) FRANK HAYDON, Secretary.

N. Bishop Harman, Esq., M.B., F.R.C.S., West London Hospital, W.

*** We have every sympathy with the desire of the authorities of the West London Hospital to secure for the senior students working at the institution under the direction of the resident medical officers the fullest recognition of their time so spent, but we cannot say that we are surprised to find that the English Conjoint Board and the University of London were unable to accede to the request made to them. There are two sides to the question and the Society of Apothecaries saw one. But at the present time there is no demand for additional centres of clinical instruction for medical students. The hospitals attached to medical schools being short of their usual complement give ample opportunities for those left behind to obtain clinical appointments without losing the benefit of classes of instruction which can be conveniently given in the medical schools.—ED. L.

THE RECENT OUTBREAK OF BUBONIC PLAGUE IN CUBA.

To the Editor of THE LANCET.

SIR,—The present reappearance of plague in Havana commenced on Feb. 5th last. The sanitary authorities of Cuba believe this to be a recrudescence of the outbreak of 1912, which appeared to have been extinguished by June 20th, 1914. There is every reason to believe that their supposition is correct. Three cases occurred in February, one in March, eight in April, and four in May up to the 7th of that month, making a total of 16 cases in all. No case has developed between May 7th and the present date—May 25th. Dr. J. Guiteras, the director of health, called attention to the fact that the first cases in this recent outbreak occurred in a circle around the zone which had been rat-proofed the previous year. The cases have been mostly confined to wholesale groceries and forage stores in

the older part of the city. In no instance but one have the cases of bubonic plague exceeded one in each building infected, and the measures taken to prevent its spread appear to have been quite effective in controlling the epidemic. In the exceptional instance referred to three cases occurred in the same building out of six residents in the house, and within a period of 36 hours. The house was a charcoal store and depository of empty sacks in the residential part of the city, far removed from the so-called infected area. There was no depôt for the sale of food of any kind in the house, and no rats were caught in the subsequent fumigation and trapping on the premises. This is one of the instances in which Dr. Guiteras believes there is evidence of the transmission of plague by fleas harboured by empty bags, a possibility, however, which he limits to a city, and does not regard as extending to transportation to a distance or to foreign commerce.

The Cuban sanitary authorities believe that they possess very effective means for the prompt control of plague in the free use of hydrocyanic acid, which they apply in fumigations on a large scale, covering under canvas several buildings simultaneously. By this procedure a large number of rats are caught at once, and fleas, cockroaches, and all sorts of insects are destroyed. Another form of disinfecting application used consists in the injection of hydrocyanic gas into rat holes and runs. It must be admitted that the number of cases in each outbreak of bubonic plague in Cuba is singularly small, notwithstanding the fact that Havana, its capital, is a very important commercial centre and distributing seaport, with buildings whose thick walls of friable mortar, especially the old ones in the wholesale business portion of the city, have been proved to be, up to a considerable height from the ground, full of runs and holes used by rats.

The secondary manifestations of the recent outbreak of plague in neighbouring towns to Havana have been few and each limited to an initial case. It is evident, however, that the measures taken for a definite extinction of the disease are deficient. This is due to the fact that the Cuban sanitary authorities have not been able to enforce the ordinances for rat-proofing of buildings, nor have they succeeded in awakening sufficient general public interest in these important matters. There are evidences, however, that the rat-proofing of buildings during the present outbreak is being enforced on a larger scale, and more efficiently than previously.

From Jan. 1st, 1915, to May 25th 13,460 rats have been examined in the Government laboratory by a well-trained and efficient staff; of that number of rats only 2 have been found infected. Out of 248 guinea-pigs exposed in various localities as infection tests in the same period 2 were found infected. The 5 first cases in the present outbreak had a fatal termination. Of the subsequent 11 cases only 2 have died. Nearly all were treated intravenously with large doses of the Paris serum. But it is to be noted that the serum at first employed had been long prepared, whereas the later cases were treated with fresh antiplague serum.

Plague was introduced into Cuba from the Canary Islands in 1912, where there has existed, at least since 1907, a latent endemic focus of the disease. This is persistently concealed by the authorities of those islands, but well known to a number of the inhabitants.—I am, Sir, yours faithfully,

A. M. FERNANDEZ DE YBARRA, M.D.

Havana, Cuba.

The War.

THE CASUALTY LIST.

THE following names of medical men appear in the casualty lists published since our last issue:—

Killed: Captain J. D. Lithgow, R.A.M.C.; Captain Andrew Wallace, 4th King's Own Scottish Borderers, was an M.B., C.M. Edin., practising prior to the war at Coldstream.

Wounded: Captain P. B. Bharucha, I.M.S.; Lieutenant C. D. Roberts, Lieutenant J. S. Stewart, attached 10th Durham Light Infantry, both of the Royal Army Medical Corps.

DEATHS AMONG THE SONS OF MEDICAL MEN.

The following sons of medical men are to be added to our lists of those who have fallen during the war:—Captain G. R. K. Evatt, Middlesex Regiment, son of Surgeon-General J. H. Evatt, C.B.; Major Sidney Morton, 24th Punjabis, only son of the late Surgeon-General G. E. Morton, I.M.S.; Lieutenant A. Porter, Lancashire Fusiliers, son of Dr. J. F. Porter, of Helmsley, Yorks; Private Eric Sparrow, 7th Rifle Brigade, second son of Dr. W. B. Sparrow, of Burton-on-Trent; Second Lieutenant J. S. Stewart, 5th Argyll and Sutherland Highlanders (a medical student), son of Dr. W. Stewart, of Gourock; Lieutenant John Harley, 13th Worcester Regiment, only son of Dr. John Harley, of Peterborough; Captain G. L. B. Concannon, 2nd Australian Infantry, only son of Dr. W. A. Concannon, of Toowoomba, Queensland; Major L. W. S. Oldham, R.E., only son of the late Brigade-Surgeon C. F. Oldham; Second Lieutenant G. F. Carter, 7th K.R.R., son of Dr. Alfred H. Carter, of Abingdon (formerly of Birmingham).

A YEAR AT WAR: THE HEALTH OF THE ARMIES.

Last Wednesday was the anniversary of the declaration of war by Great Britain on Germany, and various summaries of a year of terrible fighting alike agree in finding the position of the Allies to be strong. We had, of course, hoped for much better things, but, on the other hand, much worse things might have happened, and those who wrote or spoke in a moderate spirit are now seen to have been inspired by the fullness of knowledge. Our unpreparedness, save in the matter of our splendid fleet, is now seen to have been general; it is clear that the Government of the day did not anticipate a world war, or indeed any war in which we should be primarily concerned, and that previous Governments had been content to secure our national position with the minimum of reserve in case of unexpected trouble. But it is entirely outside the scope of a medical journal either to comment upon the general circumstances before the war or to say anything about the general circumstances after a year of fighting. We do not make any attempt to estimate the strength of our naval and military positions, the potentialities and disabilities of our Allies, or the political and financial relations of the belligerents; these are matters on which we shall not be expected to have anything to say worth listening to. Certain of our lay contemporaries have been throughout in the same plight, for many of them must have been entirely wrong in their guesses, inasmuch as contradiction in meaning, if if not in detail, has on numerous occasions been

a feature in their leading articles. The remarks which follow are confined to things whereon we are in a position to know something for certain—viz., the medical conduct of the war, and only a review of the broad situation is attempted, for week by week such details as can be obtained from trustworthy sources are published.

It must be acknowledged at once that in no previous war has such recognition been immediately extended to the value of medical assistance, and this has been the attitude both with our enemies and with all the Allied nations. We have learned enough from various sources of the organisation of the German army to appreciate that the German treatment of their sick and wounded has been very thorough, even though on many occasions their prisoners have had a right to complain of the harshness of their captors. The German military medical service has been from the first helped by elaborate preparations, made, we presume, in expectation of the war which has eventuated. The possible wastage of men from untreated wounds and sickness or unprevented epidemics was carefully guarded against. Medical service in the Austro-Hungarian army has apparently been much less satisfactory, and at various points here epidemic diseases—typhus, typhoid, and cholera—have made their appearance. The outbreaks, however, seem to have been met and cut short with promptitude, and considerable powers of strong and prudent administration have been displayed by the authorities at Vienna and Budapest. The comparative freedom of the Turks from epidemic illness has been remarkable, and we are inclined to think that with regard to Constantinople we do not know the true story.

Turning to the armies of the Allies, we have had satisfactory information with regard to the medical service of the Russian army, concerning which some apprehension was felt. The enormous Russian Empire, with its sparse railway system and huge disconnected population, endured at the outbreak of war the same difficulties in respect of medical organisation that it has endured in other directions. These difficulties are not, perhaps, referable mainly to medical personnel, though here Russia would be obviously inferior in numbers, compared with her population, to Great Britain, France, or Germany, as to a universal want throughout Russia of means of intercommunication. The recruiting of the army, the transport of stores, the collection and dissemination of material for war, and so on, have all suffered in Russia from the immense distances which have to be traversed either by mobilised troops or despatched goods, and for the time being Russia is suffering severely for what is not unpreparedness, and is certainly not inefficiency, but rather is an unmanageable geography. The medical men and the hospitals which they were destined to serve when not with the troops at the various fronts, being in those centres which possess a railway service, the medical side of the Russian military administration has been comparatively good, while from various correspondents we have heard of the unstinted attention paid to the wounded by the voluntary nurses and civilian medical men who have taken charge of numerous newly organised hospitals. Owing to such devoted service the Russian army, though not possessing a medical service or a hospital equipment comparable to some of the other great European powers, has been able to show a good bill of health throughout a terrible year And it must be remembered that no other army has been so sorely driven by the exigencies of war.

The story of Serbia is a triumph of preventive medicine, and the United States and Great Britain between them may lay claim to the credit that here accrues to scientific medicine. There was a time when the Serbians, who had valiantly beaten off huge crowds of invaders, looked likely to perish *en masse* from disease, and the stories of the epidemics of typhus at the beginning of last winter, terrible as they were, are now known to have by no means exaggerated the real plight. Serbia was largely without hospitals or doctors when epidemic disease became added in many places to the horrors of war. American generosity, the British Red Cross Society and the Order of St. John of Jerusalem, and private charity alike came to the rescue; hospitals were run up, the sick were segregated and treated, crusades of cleanliness were inaugurated, and with something of the same rapidity with which disease got a grip upon the country that grip was made to relax. Serbia has been terribly tried, and throughout the war will require the support of her richer Allies; but the medical outlook is now hopeful—a phrase which means the addition of many thousands to the Serbian army.

On the Western front there have been several rather smart epidemics of typhoid fever, but neither in the French, British, nor Belgian lines was the disease ever allowed to make grave headway, the policy of preventive medicine and the expert advice of sanitarians combining to keep the outbreaks under. The French army has throughout been practically free from this scourge. In common with the German army there was much suffering in the lines of the Allies from exposure in the trenches during the winter. The cold and wet did not, however, produce the amount of pneumonia or rheumatism that was anticipated, and among the British soldiers the principal cause of disability was "trench-foot," affecting those who had to spend long days and nights in trenches permanently filled with semi-freezing mud.

The figures of the casualties in the British army have been recently analysed in these columns, and terribly heavy as they have been they are not greater than might have been anticipated as a whole. Many of the losses occurred in two particular movements, whose circumstances may not have to be repeated. The care of the wounded has been steadily improved behind the Western lines, and experience has been gained of unfamiliar pathological conditions, such as, for example, gas gangrene and tetanus, which will be of the greatest practical value in the future.

On the whole, at the close of the first year of war, medicine is found to have acquitted herself well, the absence of epidemic sickness and of any catastrophe from sanitary defaults has meant a gain of innumerable lives to the Allied armies. The assistance to hospital equipment and medical service which has been rendered by Canada, Australia, New Zealand, South Africa, and India has been unsparing and magnificent. The temper of the whole British Empire, as illustrated by the sermon of the Archbishop of Canterbury at the anniversary service in St. Paul's Cathedral, and by Mr. Balfour in his moving address at the London Opera House, has been worthily reflected by medicine. Firm resolution to endure to the end and well-justified hope for the victory of the right are displayed in the hearty coöperation between our citizens in all parts of the world in the medical conduct of the war.

WAR AND THE DISCHARGE OF TUBERCULOUS SOLDIERS IN FRANCE.

In his testimony before the Permanent Commission on Tuberculosis, appointed by the French Minister of the Interior, Professor Landouzy, *doyen* of the Faculty of Medicine, made three main points. He first emphasised the injustice of discharging tuberculous soldiers without any gratuity, bounty, or pension. This course is based on the ground that military life is the occasion of the opening of, and flourishing of, the hitherto retarded buds of tuberculosis rather than the occasion of inoculations by tuberculous seed, and indicates that the recruits bring their tuberculosis to the barracks and cultivate it therein more often than they actually contract it there. The greater part of these tuberculous soldiers would, in fact, never have become so had they continued to live in their customary surroundings and not been subjected to the military overstrain; and, on the other hand, many of them have certainly contracted tuberculosis by contagion, the opportunity for which is afforded by military life. In the second place, Professor Landouzy pointed out the danger that exists in sending back straight to their homes discharged tuberculous soldiers. For after the annual entry of recruits the regimental medical service orders about 1800 of them to be temporarily rejected as unfit, being slightly attacked by tuberculosis, which, with others bearing definite lesions, though slight, make up 5000 definitely discharged as unfit. These men returning to their homes would, at the present time, be even in much greater number, as the above calculation is based only on the annual levy of 500,000 men, whereas in France to-day there are 3,000,000 men with the colours. In order to avoid the danger of thus returning all these known tuberculous men to the country at large the Tuberculosis Commission has opened negotiations with the Red Cross societies, with a view to utilising a part of their resources for the creation of military convalescent homes, of preventoriums, and of agricultural colonies where the tuberculous military men would be kept as convalescents or discharged eventually as unfit after a period requisite to re-establish them and instruct them how to live. As a consequence of these negotiations the Union des Femmes de France has decided to establish at Tonnay-Charente a sanitary agricultural colony to which the army would send soldiers suspected of pulmonary tuberculosis. Finally, Professor Landouzy pointed out the grave inconveniences which would arise by accepting too freely for military service men already injured and affected with tuberculosis. It seems urgent that the Conseils de Révision—i.e., boards examining claims of exemption from military service—should take into account the medical certificates and the opinions of the family medical men who know the personal antecedents of the recruits, and the rules should be made to eliminate all recruits with pleuritic antecedents. In short, said Professor Landouzy, the examination of recruits should be carried out in a more serious fashion, so as to safeguard at the same time both the individual and the public interests.

The Care of Tuberculous Soldiers in England.

The County Councils Association on July 28th resolved to recommend county councils to comply with the request of the War Office that the councils should undertake, as far as their accommodation allowed, the treatment of uninsured men discharged from the army for tuberculosis, and in the event of sanatorium accommodation not being available, should pay half the cost on account of such soldiers belonging to their area.

PROMOTION IN THE SPECIAL RESERVE AND TERRITORIAL R.A.M.C.

Referring to our comment in THE LANCET of July 31st (p. 258) on the misunderstanding of the nature and purpose of military rank for medical officers, we have received the following letter:—

SIR,—I cannot agree with your statement that "military rank has no relation with a medical officer's years or experience as a medical man." How is it that practically all civilians appointed to the staff of military hospitals are given, at least, the temporary rank of captain, and frequently that of major or colonel? While if the same men were appointed to a field ambulance or given charge of a battalion they would be lieutenants. It is little less than an outrage that senior experienced practitioners should be expected to do the trivial work of a regimental medical officer, which would be well within the capabilities of a fifth year student, and have to submit to the humiliation of being ordered about by an A.D.M.S. who may be years their junior, and with no professional claims whatever to command them. My corps commander is a dentist.

I am, Sir, yours faithfully,

CONSULTING SURGEON AND TEMP. LIEUT., R.A.M.C.(T).

The number of staff appointments in military hospitals is necessarily limited; they are all filled, and the cream of the medical profession is available to fill up vacancies as they occur. What the country needs is sufficient medical men to fill the essential posts of regimental officers in the Royal Army Medical Corps, whose duties are necessarily of the routine order. A regimental medical officer, if he does his duty properly, will find ample occupation in looking after field sanitation, teaching his men first aid, looking after their proper clothing, feeding, and so forth, duties necessarily of the routine order and including much that is purely military as well as what is medical. Judged from the point of view of the service and the ultimate benefit of the nation, we have it on the best military medical authority that so far from these duties being regarded as "trivial" and "well within the capabilities of a fifth year student," they are of the first importance. During time of peace there would naturally be little inducement to attract to such posts leading men. This, however, is not peace time, but the greatest war the world has ever known, a fight to a finish, in which no compromise is possible or thinkable, and the medical profession as a whole is expected to do its share without regard to individual *amour propre*, to avert absolute national annihilation. Our correspondent says his "corps commander" is a dentist. His corps is the Royal Army Medical Corps (T.F.), and his "corps commander" is therefore necessarily a member of the medical profession. If our correspondent means the commanding officer of the regiment to which he is attached, the latter's occupation in civil life has no bearing on the subject. Our correspondent's military designation of himself is not wholly accurate. There are no "temporary" commissions in the Royal Army Medical Corps (T.F.); all such commissions are permanent. Temporary commissions are granted only in the Royal Army Medical Corps. Now medical officers in the Territorial Force had the chance of joining a Field Ambulance, a General Hospital, or becoming a regimental medical officer, and our correspondent elected the last named with its specific obligations and limitations.

VACANCIES FOR MEDICAL OFFICERS.—We are asked to state that four medical officers are required immediately for service with the Shropshire Royal Horse Artillery, in the Cheshire Yeomanry, Denbighshire Yeomanry, and Field Ambulance Units respectively of the 2nd Line Welsh Border Mounted Brigade. Pay and allowances as in the Regular Army. Further particulars can be obtained on application to Lieutenant-Colonel D. C. Leyland Orton, Senior Medical Officer, 2nd Line Welsh Border Mounted Brigade, Lambton Park Camp, Chester-le-Street, Co. Durham.

ARRIVAL IN EDINBURGH OF WOUNDED FROM THE DARDANELLES.—100 men wounded at the Dardanelles arrived in Edinburgh by hospital train on the morning of July 28th; 35 were taken to the Royal Infirmary, 25 to the Deaconess Hospital, 25 to the Dalmeny Park Military Hospital, and 15 to Leith Hospital. Practically all the cases were cot cases, and bullet and shrapnel wounds were responsible for nearly all. The men had been wounded on July 12th. From the field stations they had been taken immediately on board a hospital ship, and thence direct home.

TOURING CARS NEEDED FOR MOTOR AMBULANCE CONVOYS.—The Joint Committee of the British Red Cross Society and the Order of St. John appeal for at least 20 motor-cars, with an open touring body of about 16–20 h.p., to be used as motor ambulance convoys in Egypt and France. Communications to be addressed to Mr. E. M. Clarke, Director of the Motor Ambulance Department, 83, Pall Mall, S.W.

CHANGE OF ADDRESS.—The Red Cross Inquiry Department for Wounded, Missing, and Prisoners has removed from 20, Arlington-street, and letters should henceforth be addressed to the Secretary, Inquiry Department of the Red Cross, 31, St. James's-square, S.W.

THE WELSH METROPOLITAN MILITARY HOSPITAL, CARDIFF.—This hospital, it was stated by Colonel Goodall on July 29th, though possessing accommodation for 900, was only half occupied at present owing to lack of medical assistance, that available being inadequate to cope with more.

THE FEEDING OF BELGIUM.—Among the various media of charity during the war a high place must be accorded to the National Committee for Relief in Belgium. It will be remembered that some time ago Mr. W. C. Edgar, the editor of the *Northwestern Miller*, obtained from the millers of America a cargo of flour of the value of £120,000 for the distressed people of Belgium. He went to Belgium in order to satisfy himself that the food distributed by the National Committee actually reached those for whom it was intended, and he published the results of his independent investigation in the pages of his trade journal. This article has now been reprinted in pamphlet form and published by the National Committee for Relief in Belgium, Trafalgar Buildings, Trafalgar-square, London. Both the text and illustrations of the reprint supply ample proof of the dire need of the unfortunate Belgian people, while the work of relief under almost insuperable difficulties is shown to have been thoroughly well done.

WANTED, AMBULANCES AND HOSPITAL TRAINS.—The Duke of Portland, as president of the British Ambulance Committee, has issued an appeal for 15 four-stretcher ambulances or of new cars suitable for conversion for the ambulance sections of the committee working with the French army in the Meuse and Vosges districts. Subscriptions may be sent to the Duke of Portland at Welbeck Abbey, Worksop, Nottinghamshire, or to the honorary secretaries, Mr. B. Peyman and Mr. Cecil Baker, 23A, Bruton-street, W. Lady Brooke appeals for a new hospital train to replace the British ambulance train in France, on which she has been actively employed since November, 1914. The present train is made up of a miscellaneous assortment of French second- and third-class railway carriages, the kitchens being composed of cattle trucks. The train is non-communicating and contains only seven beds in one large van for the very bad cases, the other patients having to lie on the seats of carriages or on stretchers on the floor of third-class carriages gutted of compartments and seats. Sir Alfred Keogh has expressed his warm approval, and states that the required cost will be about £20,000. The Lord Mayor adds his name to the appeal. Subscriptions may be made payable to the honorary secretary and treasurer of the fund, the Hon. Sir Arthur Walsh, St. James's Palace, S.W.

AN OFFICIAL NARRATIVE OF THE WAR.—Many people will be glad to have in book form "Eye Witness's Narrative of the War" (London: Edward Arnold. Pp. 303. Price 1*s.* net), which has been contributed from time to time to the daily press. The reprint is brought down to March, 1915, and the narrative is in the form communicated by the Press Bureau. The account on p. 109 of the French medical officer who refused to leave 54 wounded Germans whom he was attending in the Civil Hospital at Ypres at a time when that hospital was being shelled by Germans, who knew that it contained their own wounded, brings in sharp contrast the humanity of the French and the lack of it on the part of a nation boasting of culture. The medical officer was killed at his post by a shell.

AN AMBULANCE TRAIN.—An ambulance train, constructed by the London and North-Western Railway Company to the order of the War Office, has been on view this week at Euston, and subsequently at Cannon-street Station. It consists altogether of 16 vehicles. Of these 4 are ward cars for lying-down cases, 5 are ordinary cars for sitting-up cases, 2 are kitchen cars, 1 is for medical appliances, 1 for medical officers and nurses, 1 for orderlies, and 2 are brake vans. Each ward contains 36 cots, there being 3 cots on each side of each compartment, arranged longitudinally—i.e., along the sides of the carriage, and not cross-wise, as in an ordinary railway compartment. The carriages are entered from the ends, and patients are taken out through a wide door at the side. The floors are covered with oilcloth and all woodwork is painted white. Lighting is by electricity, and heating by steam. Each car has a lavatory and water-closet. The pharmacy car contains the medical stores and appliances, and has also a "treatment room," equipped with an operating table, if urgent necessity arises for operation *en route*. The staff car contains ample accommodation for medical officers and nurses, and the car for orderlies has sleeping accommodation for 28. The kitchen cars are elaborately fitted up with every requisite, and in one of the brake vans there is a ward for infectious cases. A great deal of thought has been exercised in the planning of these cars, and the use of every corner is remarkably ingenious.

WAR RELIEF AND PERSONAL SERVICE.—A conference on war relief and personal service, organised by charity organisation societies and guilds of help, was held this year at Caxton Hall, Westminster, early in June, and its proceedings have now been published in book form by Messrs. Longmans, Green and Co., price 1*s.* net. An important part of the charitable work of this country is done by voluntary workers, so that discussions with the object of coördinating the work of such institutions as schools for mothers, maternity and health societies, and kindred institutions are valuable. The proceedings are worthy of reading by all interested in the relief of distress.

A useful little help for those desirous of finding out in what directions they can best distribute such contributions as they may be able to afford towards alleviating distress or providing help in the war is "War Distress and War Help," by Helen Donald-Smith. It is a short catalogue of the leading war help societies, showing their scope and objects and the addresses of their offices, and is published by Mr. John Murray of Albemarle-street, W., price 6*d.* net.

THE X ray motor ambulance contributed by the Scottish Women's Hospitals will be staffed by women doctors and orderlies, under the charge of Dr. Agnes Savill. Even the chauffeur will be a woman. Its line of activity will be close in rear of the firing line, travelling from place to place as required.

THE New Zealand War Hospital at Mount Felix, Walton-on-Thames, was opened on July 31st. It will accommodate 110 patients, and the funds have been raised by New Zealanders in this country with some help from the Dominion, but without making any appeal to the British public.

AT a garden fête held at Craigengar, Spylaw-road, Edinburgh, a sum of £92 10*s.* was made in aid of Red Cross work at the Dardanelles.

MR. L. E. Barrington-Ward, who has lately returned from Serbia, has been appointed a visiting surgeon to the King George Hospital.

Medical News.

UNIVERSITY OF OXFORD.—The following degree has been conferred:—

Master of Surgery.—A. H. Southam, Christ Church College.

The following candidates have satisfied the examiners:—

Diploma in Public Health.—Part I.: E. B. Argles, E. Clarke-Cohen, R. V. Shivashwarkur, and A. K. Soutar. Part II.: A. E. A. Carver.

ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At a meeting of the Comitia of the Royal College of Physicians of London and of the Council of the Royal College of Surgeons of England on July 29th, diplomas of L.R.C.P. and M.R.C.S. were respectively conferred upon 113 candidates who have passed the Final Examination in Medicine, Surgery, and Midwifery of the Conjoint Board, and have complied with the necessary by-laws. The following are the names and schools of the successful candidates:—

John Gordon Ackland, St. Bartholomew's Hospital; Cyrus Gerald Ainsworth, M.A. Cantab., Cambridge University and London Hospital; Douglas Reid Alexander, St. Mary's Hospital; John Struan Alexander, University College Hospital; Ernest Haik Riddall Altounyan, Cambridge University and Middlesex Hospital; Thomas Anwyl-Davies, St. Thomas's Hospital; Guido Carlo Giulio Baldini and Edgar Broughton Barnes, St. Bartholomew's Hospital; John Vincent Barnes, Cambridge University and University College Hospital; Claude Wells Woolloton Baxter, Guy's Hospital; John Junius Osmonde Beven, M.A. Cantab., Cambridge University and Middlesex Hospital; Kasargod Somanath Bhat, B.A., Madras University and St. Bartholomew's Hospital; Eric Biddle, University College, Cardiff, and Guy's Hospital; John Archibald Binning, University College Hospital; Douglas Arthur Blount and Charles Vincent Boland, St. Bartholomew's Hospital; Charles Carrick Brewis, B.A. Cantab., Cambridge University and London Hospital; Walter Herbert Butcher, B.A. Oxon., Oxford University and St. Bartholomew's Hospital; Frederick Vaudrey Cant, B.A. Cantab., Cambridge and Manchester Universities; John Bernard Cavenagh, B.A., M.B., B.Ch. Oxon., Oxford University and St. Thomas's Hospital; Louis Abel Celestin, University College Hospital; John Edward Clark, Guy's Hospital; Stuart Jasper Cowell, B.A. Cantab., Cambridge University and University College Hospital; Herbert McWilliams Daniel, M.B., B.Ch., B.A.O., Trinity College, Dublin; Robert Malcolm Dannatt, St. Bartholomew's Hospital; William John Dearden, Manchester University; David Hamilton Derry, St. Bartholomew's Hospital; Reginald Oliver Eades, University College Hospital; Stanley Ernest York Elliott, St. Mary's Hospital; David Trevor Evans, University College, Cardiff, and University College Hospital; Robert Chisholm Fairbairn, B.A. Oxon., St. Bartholomew's Hospital; Ronald Kelson Ford, London Hospital; Charlotte Iris Fox, Royal Free Hospital; Olaf Gleeson, Westminster Hospital; Gopalkrishna Ramchandra Gokharkar, L.M.S. Bombay, Bombay University and Guy's Hospital; Charles Humphry Gow, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Alexander Percival Green, University College and St. Bartholomew's Hospitals; John Alan Campbell Greene and Geoffrey Dowson Gripper, Guy's Hospital; George Harris Haines, University College Hospital; Henry Ward Hales, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Norman Hammond Hill, St. Bartholomew's Hospital; Russell Walbancke Hodgson-Jones, Manchester University; Hugh Llewelyn Glyn Hughes, University College Hospital; Harold Reginald Wessen Husbands, Bristol University; Stanley Walter Isaacs, St. Bartholomew's Hospital; Lancelot George Jacob, B.A. Cantab., Cambridge University and London Hospital; Henry Cecil Jennings, St. Thomas's Hospital; Frank Alexander Knott, A.R.C.Sc., Guy's Hospital; Roy Dyson Langdale-Kelham, University College Hospital; Walter Norman Leak, B.A. Cantab., Cambridge University and St. George's Hospital; Cyril George Learoyd, St. Thomas's Hospital; James Bertram Leather, B.A. Cantab., Cambridge and Birmingham Universities; Pow Kan Liang, B.A. Cantab., Cambridge University and London Hospital; Sidney John Liddon Lindeman and Geoffrey Challen Linder, St. Bartholomew's Hospital; Eric Delafield Lindow, King's College Hospital; Vernon Edmund Lloyd, Guy's Hospital; Walter Henry Lloyd, Middlesex Hospital; Samuel Durham Lodge, Leeds University; George Samuel Bousfield Long, Guy's Hospital; John Edward Carbery Maguire, St. Bartholomew's Hospital; Sydney Alan Stormer Malkin, University College Hospital; Gerald Struan Marshall, L.D.S. Eng., Charing Cross Hospital; Archibald Daniel Marston, L.D.S. Eng., Guy's Hospital; John Beattie McFarland, B.A. Cantab., St. Bartholomew's Hospital; William George McKenzie, Bristol University; Charles Harold Medlock, L.D.S. Eng., Guy's Hospital; Thomas Walter Melhuish, B.A. Cantab., Cambridge University and Middlesex Hospital; Ralph Godfrey Michelmore, London Hospital; Sadek Girgis Moftah, Cairo and London Hospital; Ferdinand Molina, St. Thomas's Hospital; Richard Glyn Morgan, St. Bartholomew's Hospital; Allan Hawkins Morley, London Hospital; Edward Hugh Morris, Charing Cross Hospital; Ismail Mortada, B.A. Cantab., Cambridge University and University College Hospital; William Linnell Partridge, L.D.S. Eng., Guy's Hospital; Nusserwanjee Sorabjee Paruck, M.B., B.S. Bombay, Bombay University and Charing Cross Hospital; Bernard Charles William Pasco, University College Hospital; Leonard George Phillips, B.Sc. Lond., Middlesex Hospital; William Howard Pickup, Birmingham University; Thomas Lord Price, B.A. Oxon., Oxford University and St. Thomas's Hospital; Robert Arthur Welsford Procter, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Arthur Lisle Punch and Kenneth Noel Purkis, Guy's Hospital; Griffith James Randell, B.Sc., Cardiff and Westminster Hospital; Robert Marmaduke Riggall, L.R.C.P. & S. Edin., L.F.P. & S. Glasg., Manchester University; Edgar Stanley Rowbotham, Charing Cross Hospital; Christopher George Schurr, Cambridge University and University College Hospital; Eric Arnold Scott, University College Hospital; Noel Archibald Scott, St. Bartholomew's Hospital; Jelal Moochool Shah, Bombay University and St. Bartholomew's Hospital; Everard William Lewen Sharp, Cambridge University and London Hospital; Thomas William Sheldon, Cambridge University and Guy's Hospital; Samuel Arnold Sittampalam, L.M.S. Ceylon, L.R.C.P. & S. Edin., L.F.P. & S. Glasg., Ceylon Medical College and Middlesex Hospital; John Bevil Grenville Skelton, London Hospital; Raymond Stowers, University College Hospital; Frederick Reginald Sturridge, Middlesex Hospital; Thomas Collyer Summers and Ramon Romero Sy Quia, London Hospital; Eric Underhill, Birmingham University; Cecil Pembrey Grey Wakeley, King's College Hospital; Morris John Theodore Wallis, Guy's Hospital; Ambrose Huntington Warde, St Thomas's Hospital; William Turner Warwick, Cambridge University and Middlesex Hospital; Tertius Thomas Boswall Watson, B.A. Cantab., Cambridge University and London Hospital; Frederick Langton Webster, Manchester University; William Ronald White-Cooper, St. Bartholomew's Hospital; Brian Whitehead, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Nathan Judah Wigram, Sheffield University; Geoffrey Legh Wilkinson, L.D.S. Eng., Birmingham University; Arthur Willatt, London Hospital; and Harold Williamson, Durham University and Charing Cross Hospital.

Diplomas in Public Health were conferred jointly by each College upon the following five candidates:—

Ram Das, L.M.S. Punjab, Punjab University and University College Hospital; Syama Prasanna Gupta, L.M.S. Calcutta, Calcutta University and King's College; William Reginald Huleatt Heddy, L.R.C.P., M.R.C.S., Middlesex Hospital; Ernest Albert Argent Saunders, L.R.C.P., M.R.C.S., University College; and Norman Leslie Galloway Wilson, M.B., B.S. Melb., Melbourne University and University College.

The Diploma in Tropical Medicine and Hygiene was also conferred jointly by each College upon the following gentleman, who has passed the requisite examinations:—

Sahib Singh Sokhey, B.Sc., M.B., Ch.B. Edin., London School of Tropical Medicine.

The Council of the Royal College of Surgeons of England on the same date conferred the Licence in Dental Surgery upon Mr. William Greaves Pullan, of Leeds University, who has previously passed the requisite examinations, and has now complied with the by-laws of the College.

At the First Professional Examination of the Examining Board in England by the Royal Colleges of Physicians of London and Surgeons of England held on July 20th, 21st, 22nd, 23rd, and 24th, the following candidates were approved in the undermentioned subjects:—

Chemistry and Physics.—Stanley Ackroyd, Leeds University; John Harrison Allan, Liverpool University; Willie Beaumont, London Hospital; Benjamin Faltas Behman, King's College; Richard Alec Dudley Jefferson Bernhardt, Middlesex Hospital; Frederica Mary Bradley, London School of Medicine for Women; Norman Edward Davies Cartledge, St. Bartholomew's Hospital; Marjorie Carnsew Chappel, London School of Medicine for Women; Ignatius Joseph Cruchley, London Hospital; Samuel Ellison, Leeds University; John Langwell Farquharson, University College, Southampton; Marion Brown Gray, London School of Medicine for Women; Thomas James and Kenneth Charles Johnston Jones, St. Bartholomew's Hospital; Salomon Kadinsky, Brussels and King's College; John Kendall, Guy's Hospital; Evan Robert Lloyd, University College, Bangor; Kathleen Maria Boyce McArthur, Newnham College, Cambridge; Vernon Arthur Newton, Birmingham University; Frederick Ferdinand Petersen, London Hospital; Evan Albert Idris Phillips, University College; Betsey Porter, London School of Medicine for Women; Charles Edward Roach-Smith, London Hospital; Jack Lionel Le Page Sanders, Gloucester Municipal Schools; Frank Arthur Smorfitt, Leeds University; Bertram Hooper Stribling, London Hospital; Horace Smith Ward, Leeds University; and Lionel Kenneth Watson and Ronald Edward Williams, Guy's Hospital.

Chemistry.—Harry Aukland, Liverpool University; Anna Bridget Broman, London School of Medicine for Women; Kenneth Glaisby and Eric Hardy, Guy's Hospital; John Walter Hulme, Middlesex Hospital; Allan Arthur Knapman, University College, Exeter; Paul Lindsey, St. Bartholomew's Hospital; David Mackay, Charing Cross Hospital and King's College; Robert Henry Roe, Hull Municipal Technical College; and Geoffrey Bathe Withers, London Hospital.

Physics.—Frederick Thomas Allen, St. Thomas's Hospital; Frank Barker, King's College; William Edward Barnes, University College; Eva Morton, London School of Medicine for Women; and Charles Vincent Douglas Rose, University College.

Biology.—John Harrison Allan, Liverpool University; John Griffith Barrie, Guy's Hospital; Benjamin Faltas Behman, King's College; Richard Alec Dudley Jefferson Bernhardt, Middlesex Hospital; John Paul de Silva, London Hospital; John Langwell Farquharson, Hartley University College, Southampton; Alfred Foster, St. Bartholomew's Hospital; Marion Brown Gray, London School of Medicine for Women; Thomas Hodgson Jordan Hargreaves, Royal Albert Memorial College, Exeter; Frederick John Harvey, Birmingham University; Joseph Arnold Hawkridge, St. Mary's Hospital; Charles Harold Sterne Horwitz, Guy's Hospital; Wilfrid Eric Howell, University College, Cardiff; John Walter Hulme, Middlesex Hospital; Salomon Kadinsky, Brussels and King's College; Jorge Mariano Humberto Linares, Charing Cross Hospital and King's College; George Geoffrey Newman, London Hospital; Madeline Phyllis Parker, London School of Medicine for Women; Griffith Wynn Vaughan Parry, University College, Cardiff; Adeline

Irene Stephenson Roose, Liverpool University; Charles Vincent Douglas Rose, University College; George Foster Smith, Manchester University; Joseph Hajee Sullaiman, Guy's Hospital; George Marston Trist, Charing Cross Hospital and King's College; Horace Smith Ward, Leeds University; Lionel Kenneth Watson, Guy's Hospital; Octavia Margaret Wilberforce, London School of Medicine for Women; Henry William Miles Williams, University College, Cardiff; Samuel Anthony Withers, L.D.S. Eng., Birkbeck College; Robert Wolff, Middlesex Hospital; and Fuad Wanis Zaglama, Manchester University.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At the Preliminary Science Examination for the Licence in Dental Surgery held on July 20th, 22nd, and 23rd, the following candidates were approved in the undermentioned subjects:—

Chemistry and Physics.—Arthur George Allen, Birkbeck College; Harry Ashling, Grimsby Municipal College; Arthur Frederick Bartle and Cyril Charles Becker, Guy's Hospital; Cyril Charles de Albuquerque Birch, Polytechnic Institute; William Henry Bradfield, University College, Exeter; Hubert Frederick Buchan, Bristol University; Hubert James Burke, Liverpool University; Donald Frederick Chesters, Birkbeck College; Alan Raymond Cox, Municipal Technical College, Brighton; Arnold Philip Deverell, Bristol University; Donald Tom Gordon Dickens, University College, Nottingham; Cecil Weldon Empey, London Hospital; Charles Henry Freeman, Ipswich Technical School; Iris Elizabeth Gardiner, London School of Medicine for Women; Myer Garfinkel, University College; John Beaumont Gregor, Guy's Hospital; Edith May Humby and Mabel Frances Humby, Birkbeck College; William Henry Hume, Royal Dental Hospital; John Emrys Jones, Towyn County School; Reginald Noel Lakeman, Polytechnic Institute; Margherita Maria Loretz, Birkbeck College; Leslie Lyon, Polytechnic Institute; Richard Noel Moritz, Malvern College; Alfred Thomas Partridge, Polytechnic Institute; Albert Edward Rees, Swansea Technical College; Douglas Reginald Salter, Plymouth Technical School; Dorothy Mary Smith, Polytechnic Institute and Birkbeck College; James Isaac Smith, Liverpool University; William Howroyd Smorfitt, Leeds University; William Wallace Harold Truscott, Plymouth Technical Schools; Harold Christopher Tweney, Swansea Technical College; Richard Murray Underwood, Guy's Hospital; Enid Walker, University College, Reading; Leslie McLaren Wheeler, Royal Albert Memorial College, Exeter; and Cyril Blake Wood, City of London School.

Chemistry.—Leonard Henry Buchan, Bristol University; Harold Arthur Coysh, Royal Dental Hospital; Iorwerth Dulyn Davies, Birmingham University; Myer Ginsberg, Polytechnic Institute; Humphry Bryan Thomasson Hope, Royal Dental Hospital; Horace Oliver Irwin, Guy's Hospital; Herbert Myers Marshall, Technical College, Sunderland; Herbert Shires Murray, Guy's Hospital; and Arthur Douglas Ray, Salford Technical Institute.

Physics.—Leonard Alfred Brown, Royal Dental Hospital; Frederick George Pritchard Flanders, Guy's Hospital; Harold Greaves, South-Western Polytechnic; Francis John Myers, Hull Municipal Technical College; and Joseph Frederick Weakley, Southend Technical School.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.—At a meeting of the College held on July 22nd the following, having passed the requisite examinations, were admitted Fellows:—

Cecil Burnham, M.B., Ch.B. Edin.; Charles Gibson, M.R.C.S., L.R.C.P. Lond., M.B., B.S. Lond.; Evan Greene, M.D., C.M. McGill Univ., Montreal; Charles Henry Hayton, L.R.C.S. Edin. (Triple Qualification); Satya Sakha Maitra, L.M. & S. Calcutta, L.R.C.S. Edin.; Abraham Zadok Philips, M.D. Edin.; James Coubro Potter, M.D. Edin., L.R.C.S. Edin. (Triple Qualification); Vinayak Laxwan Sathe, L.M. & S. Bombay, L.R.C.S. Edin.; and William Douglas Yuille, L.R.C.S. Edin. (Triple Qualification).

UNIVERSITY OF GLASGOW.—The following degrees have been conferred:—

Bachelor of Medicine and Bachelor of Surgery (M.B., Ch.B.).—With honours: John Mandeville Macfie and John Desmond Milligan. With commendation: John Crawford Knox, B.Sc., Robert Stuart Gibson, B.Sc., Moses Wolffe Cantor, B.Sc., John King Rennie, B.Sc., William Frederick Shanks, B.Sc., William Cunningham, and Robert Milne Lang. Ordinary degrees: Dugald Stewart Campbell, M.A., William Campbell, John Gilchrist, Colin Campbell Blair Gilmour, M.A., Janet Fraser Hencerson, Helen Isobel Winifred Kerr, James Alexander Leiper, Reginald Lyon, David M'Farlane, Alexander Fraser M'Intosh, George Maclean, Peter Donald MacLean, M.A., Malcolm Bonar Macleod, David M'Neill, Frederick William Morrison, Mary Anderson Noble, Alexander Scott, James Tait Smith, M.A., Isabel Stirling Thomson, Adrian Johannes van der Spuy, John Dalglish Watson, Robert James Wilson, Mary Ferguson Wood, M.A., and Alexander Young.

Bachelor of Science (B.Sc.).—Thomas Rogers.

CENTRAL MIDWIVES BOARD.—Special meetings of the Central Midwives Board were held at Caxton House, Westminster, on July 20th and 21st, with Sir Francis H. Champneys in the chair. A number of midwives were struck off the roll, the following charges, amongst others, having been brought forward: The midwife not being scrupulously clean in every way, including her person, clothing, and appliances, as required by Rule E. 1; that when attending patients she did not wear a clean dress of washable material, as required by Rule E. 1; refusing to comply with the reasonable request of the inspector of midwives to supply a lining to her bag of appliances in conformity with Rule E. 2. The child suffering from inflammation of, and discharge from, the eyes and continuing so to suffer during the remainder of the midwife's attendance, she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E. 20 (5); the midwife being unable to make use of a clinical thermometer, and consequently not taking and recording the pulse and temperature of patients at each visit, as required by Rule E. 13; not possessing a bag or basket for appliances furnished with a removable lining which can be disinfected, as required by Rule E. 2. At the date of attendance upon a patient the midwife was in contact with a case of puerperal fever and had not undergone any disinfection to the satisfaction of the local supervising authority, as required by Rule E. 5; and the advice of a registered medical practitioner having been sought, she neglected to notify the local supervising authority thereof, as required by Rule E. 21 (1) (a).—A meeting was held on July 22nd, with Sir Francis H. Champneys in the chair. A letter to the chairman was read from Dr. A. Stookes, one of the Board's examiners at the Manchester Centre, commenting on the propriety of allowing a midwife to undertake intra-uterine manipulations as suggested by one of the questions set at the examination of June 15th, 1915. In the correspondence read it appeared that Dr. Stookes asked, in view of a question set in the recent examination, what intra-uterine manipulations came within the province of the midwife. The chairman drew attention to the qualifying words "in great emergencies." He instanced the case of dangerous bleeding before the expulsion of the placenta, and said that a midwife who, in case of grave emergencies, did not endeavour to remove it, would not be held by the Board to be doing her duty. Dr. Stookes replied that he did not think intra-uterine manipulations should be encouraged in midwives. He considered bimanual compression would be safer without definite instruction. He mentioned that in Liverpool midwifery practice was passing largely into the hands of midwives, over 78 per cent. of the cases being attended by them. He considered that midwives had too few opportunities for practical work, and that while they could answer examination questions their practical training had not improved. He gave instances of the answers he had received orally on the subject of intra-uterine manipulations, and mentioned that one candidate admitted she had only made two vaginal examinations during her training. The Board in their reply said they had carefully considered Dr. Stookes's letter. They considered the words "in great emergencies" safeguarded the position. They hoped that the quality of the teaching would improve with the longer training which was now under consideration. In conclusion, the Board decided that the chairman's letter be approved. A letter was read from Dr. F. N. K. Menzies, principal assistant medical officer of health of the county of London, asking the Board's opinion as to whether the administration of the London County Council Bill dealing with lying-in homes, assuming the event of its becoming law, be entrusted to the London County Council or to the various borough councils. It was decided that the Board strongly approved the view of the chairman, expressed in his letter to Dr. W. H. Hamer of July 15th, 1915, that administration should be entrusted to the London County Council, not to the borough councils.

ABERDEEN COUNTY COUNCIL AND SANATORIUM BENEFIT.—At a meeting recently held by the Sanatorium Benefit Committee of the Aberdeen County Council a letter was submitted from the Local Government Board relating to the council's scheme for the provision of sanatorium accommodation. This referred the committee to a press notice directing all councils to obtain the approval of the Treasury before entering upon any arrangements for the expenditure of capital. The Board has, after communicating with the Treasury and with the Scottish Insurance Commissioners, written to say that no fresh undertaking should be entered upon involving capital expenditure. No fresh site should be acquired, and where a site had been

acquired and no contract for building entered upon any further steps which would necessitate capital expenditure should be postponed. It was agreed that no more must be done in certain directions in which the council, then acting under the Board's advice, had contemplated building, but the committee decided to recommend the erection of ten new shelters for patients receiving sanatorium benefit, the cost of such shelters not to exceed £19 each. It was stated that 17 patients were then awaiting accommodation. With regard to the treatment of dependents for tuberculosis by the Insurance Committee it was stated that a certain amount of domiciliary treatment had been given to these, chiefly in the nature of special food and medicine, and that the Commissioners had declined to sanction this, as medical treatment had not been arranged for. The Insurance Committee had therefore decided to confine its work to the insured, and to treat them so far as its funds would permit, leaving all other cases to be dealt with by the county council. The chairman accordingly moved that the county council should be recommended to approve of an arrangement on those lines, and this was agreed to.

THE SHORTAGE OF MEDICAL MEN.—At the meeting of the British Hospitals Association held on July 30th at Charing Cross Hospital the question of the shortage of medical officers for the voluntary hospitals occasioned by the war was discussed. Mr. J. C. Buchanan, secretary of the Metropolitan Hospital, Dalston, pointed out that hospitals were not in a position to offer salaries for residents that could compete with the pay in the Services. Sir William Collins said that the increased salaries came on the top of reduced subscriptions and increased general expenses due to the war, and deprecated the attitude which prevented some hospitals from accepting the services of Indian and other coloured medical men. He also spoke highly of the advantages of employing women doctors, but Dr. T. J. Verrall pointed out that the supply of women doctors was limited.

LORD MAYORALTY OF CARDIFF.—Councillor R. J. Smith, M.B., B.Ch.R.U.I., was nominated for the Lord Mayoralty of Cardiff, 1915–16, at a meeting of the Cardiff city council held on July 28th. Dr. Smith, who was born in 1873 at Middleton, co. Cork, graduated at the Royal University of Ireland in 1896, and in the following year went to Cardiff, where he has since remained in practice. He entered the Cardiff corporation in 1903, and has shown much practical sympathy with the public health work of that city. He is a visiting physician to the Welsh Metropolitan War Hospital, Whitchurch, one of the governors of King Edward VII. Hospital, Cardiff, and a member of the South Wales University College Council.

PRESENTATION TO A MEDICAL MAN.—Dr. J. S. Cameron, who recently retired from the position of medical officer of health for Leeds owing to ill-health, was presented on July 30th with a silver tray and Chippendale clock by the present and past members of the staff at the public health offices, Leeds. In the course of the proceedings it was mentioned that most of the great sanitary improvements that had taken place in Leeds owed their conception and completion to Dr. Cameron, who had helped to decrease the death-rate of the city from a previous average of 22 per 1000 to the low rate of 15 per 1000.

GREAT NORTHERN CENTRAL HOSPITAL, HOLLOWAY-ROAD, N.—At a meeting on July 29th Mr. H. J. Tennant, M.P., made an urgent appeal for £12,000 to £14,000 without delay. Notwithstanding that over 500 wounded soldiers had been cared for, with only four deaths, there had been an increased civilian demand on the hospital resources ever since the war began. The year's expenditure had been added to by the growing employment of massage, electricity, and X rays.

A MINER having been partially buried at South Pelaw Colliery by a fall from the roof of 60 tons of stone, Dr. W. A. Mackellar went down the mine to lend what succour he could. He found the man badly crushed, but was able to make a dorsal injection of strychnine. He remained seven and a half hours in the pit. His conduct and courage were referred to in highly appreciative terms by the coroner, Mr. John Graham, at the inquest at Chester-le-Street.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

AHERN, MARY J., L.R.C.P. & S. Irel., has been appointed Assistant Medical Officer of Health and School Medical Officer to the Derbyshire County Council.

AHERN, M. J., L.R.C.P. & S., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Charlestown District of the county of Mayo.

EARLE, H. G., M.B. Cantab., has been appointed Professor of Physiology in the University of Hong-Kong.

HARRIS, JOHN DELPRATT, M.D. Durh., M.R.C.S., L.S.A., has been appointed Honorary Consulting Surgeon to the Royal Devon and Exeter Hospital.

MUNRO, ALEXANDER, M.B., Ch.B. Glasg., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, for the Sheriffdom of Ayr, attached more particularly to the Kilmarnock District.

SHAW, ARCHIBALD, M.D., C.M. Glasg., has been appointed Medical Officer of Health for the St. Austell (Cornwall) Urban District Council.

SMAILES, W. H., M.D. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Honley District of the county of Yorks (West Riding).

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

When the application of a Belgian medical man would be considered the advertisers are requested to communicate with the Editor.

BATH, WINSLEY SANATORIUM FOR CONSUMPTION.—Senior Resident Medical Officer. Salary £400 per annum, with board, residence, and laundry.

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL.—Surgeon. Also Assistant Surgeon.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Junior House Surgeon. Salary £100 per annum, with residence, board, &c.

BRIGHTON THROAT AND EAR HOSPITAL.—Visiting Surgeon once or twice a week. Salary as arranged.

BURNLEY, VICTORIA HOSPITAL.—House Surgeon. Salary £135 per annum, with residence, board, and washing.

BURY INFIRMARY.—Senior House Surgeon. Salary £250 per annum, with board, residence, and washing.

CAMBERWELL HOUSE MENTAL HOSPITAL.—Assistant Medical Officer. Salary £250 per annum, with board, apartments, attendance, and laundry.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—Second House Surgeon. Salary £150 per annum, with board, apartments, and laundry.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Resident Medical Officer. Salary at rate of £200 per annum. Also House Physician. Salary at rate of £100 per annum. With board, residence, and laundry in each case.

DEVONPORT, ROYAL ALBERT HOSPITAL.—House Surgeon, unmarried. Salary £150 per annum, with board and laundry.

DORSET COUNTY COUNCIL EDUCATION COMMITTEE.—School Dentist. Salary £260 per annum.

DUNDEE, SIDLAW SANATORIUM.—Resident Medical Officer.

FOLKESTONE, ROYAL VICTORIA HOSPITAL.—House Surgeon. Salary £150 per annum, with board, residence, and laundry.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—House Surgeon for six months. Also House Surgeon in Charge of Casualty Department for six months. Salary as arranged, with board, residence, and laundry in each case.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—House Surgeon. Salary £150 per annum, with board, residence, and laundry.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—House Physician for six months. Salary 30 guineas.

KENT, BENENDEN NATIONAL SANATORIUM.—Assistant Medical Officer. Salary £120 per annum, with board, residence, and laundry.

KENT (FORTRESS) ROYAL ENGINEERS, Gillingham.—Medical Officer on the Headquarters Staff.

LEEDS PUBLIC DISPENSARY.—Female Resident Medical Officer. Salary £130 per annum, with board, residence, and laundry.

LONDON LOCK HOSPITAL, Harrow-road, W.—House Surgeon for six months. Salary at rate of £150 per annum, with rooms, board, and washing.

MANCHESTER, COUNTY ASYLUM, Prestwich.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, attendance, and washing.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Parkplace, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

MILNATHORT, N.B., SANATORIUM.—Junior Medical Officer. Salary £150 per annum, with board, lodging, washing, &c.

NORTHAMPTON COUNTY BOROUGH.—Temporary Clinical Tuberculosis Officer. Salary £400 per annum.

NORTHAMPTON GENERAL HOSPITAL.—House Surgeon. Salary £150 per annum, with apartments, board, washing, and attendance.

NORWICH CITY ASYLUM, Hellesdon.—Assistant Medical Officer. Salary £250 per annum, with board, apartments, attendance, and laundry.

OXFORD EYE HOSPITAL.—House Surgeon. Salary £100 per annum, with board, residence, and laundry.

ROCHESTER, KENT, ST. BARTHOLOMEW'S HOSPITAL.—Resident Assistant House Surgeon, unmarried, for six months. Salary at rate of £110 per annum.

ROYAL EYE HOSPITAL, St. George's-circus, Southwark, S.E.—House Surgeon. Salary £100 per annum, with board, apartments, and washing.

SALISBURY GENERAL INFIRMARY—Assistant House Surgeon, unmarried. Salary £100 per annum, with apartments, board, lodging, and washing.

SHEFFIELD ROYAL INFIRMARY.—House Surgeon and Assistant House Physician. Salary £100 per annum, with board and residence.

SHEFFIELD UNIVERSITY.—Demonstrator in Pathology and Bacteriology.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Junior House Surgeon. Salary £120 per annum, with rooms, board, and washing.

STOKE-ON-TRENT INFECTIOUS DISEASES HOSPITAL.—Female Resident Medical Officer. Salary £200 per annum, with apartments, board, washing, and attendance.

WALSALL AND DISTRICT HOSPITAL.—Assistant House Surgeon and Anæsthetist. Salary £150 per annum, with board, residence, and laundry.

WEST HAM AND EASTERN GENERAL HOSPITAL.—Resident Medical Officer. Salary £160 per annum. Also House Physicians and House Surgeons. Salary £120 and £100 per annum respectively, with board, residence, and washing.

WESTMINSTER GENERAL DISPENSARY, 9, Gerrard-street, Soho.—Resident Medical Officer. Salary £120 per annum, with rooms, gas, coals, and attendance.

WIGAN, ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary £150 per annum, with board, apartments, and washing.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy for a Certifying Surgeon under the Factory and Workshop Acts at Knaresborough, in the county of Yorks (West Riding).

Births, Marriages, and Deaths.

BIRTHS.

BENNETT.—On July 30th, at Gloucester-road, Ealing, W., to Lieutenant P. T. Bennett, R.A.M.C., and Mrs. Bennett, a son, prematurely.

DICKSON.—On July 30th, at Nelson Place, Newcastle, Staffordshire, the wife of Robert H. Dickson F.R.C.S., a son.

ODGERS.—On July 30th, at Castilian-street, Northampton, the wife of Captain N. B. Odgers, F.R.C.S., R.A.M.C.(T.), of a son.

STUART.—On July 24th, at Leamore, Walsall, Violet (Mollie), the wife of Allen Murray Stuart, M.R.C.S., L.R.C.P., of a son.

MARRIAGES.

BARNETT—EDGE.—On July 28th, at St. Stephens, Westminster, James William Barnett, Captain, I.M.S., 34th Sikhs Pioneers, and Julia Frances, eldest daughter of Mr. and Mrs. Edge, Strelly Hall, Notts

GRAHAM-JONES—PRESTON.—On July 29th, at Aspall Church, Suffolk, John Lawrence Graham-Jones, B.A., M.B., Red Cross, Boulogne, to Aileen Chevallier Preston, of Aspall Hall, daughter of the late Captain John Preston, of Athlone, and of Mrs. Preston, of Kew.

GROGONO—STEELE.—On July 29th, at St. Paul's Church, Hammersmith, Dr. Jonathan Grogono, third son of late Dr. Grogono, of Witham Lodge, Stratford, and Mrs. Grogono, Herne Bay, to Florence Muriel (Sissie), elder daughter of late Dr. Russell Steele, of Hempstead House, Hemel Hempstead, and Mrs. Steele, 32, Aynhoe-road, West Kensington.

DEATHS.

GROUND.—On July 31st, at his residence, Ashford-road, Maidstone, Edward Ground, M.D., aged 61 years.

HAMILTON.—On July 28th, very suddenly, Graeme Hamilton, M.B., C.M., of Chester-place, Ashton-under-Lyne, aged 41 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

BOOKS, ETC., RECEIVED.

BALE, JOHN, SONS, AND DANIELSSON, LIMITED, London.
Religio-Medici Moderni. By Neo Kama, M.D. Price 3s. 6d. net.

CLARENDON PRESS, Oxford.
Descriptive Catalogue of the Medical Museum of McGill University. Edited by Maude E. Abbott, B.A., M.D., Curator. Part IV.: Section I., Hæmopoietic Organs. Introductions by Oskar C. Gruner, M.D. Price 10s. 6d. net.

HODDER AND STOUGHTON, London.
Kent's Care for the Wounded: A Record of the Work of the Voluntary Aid Detachments. By Paul Creswick, G. Stanley Pond, and P. H. Ashton. With preface by Sir Gilbert Parker, Bart., M.P. Price 2s. net.

KIMPTON, HENRY, London and Glasgow.
Operative Gynecology. By Harry Sturgeon Crossen, M.D., F.A.C.S. (Washington University Medical School). Price 31s. 6d. net.
Surgery of the Blood Vessels. By J. Shelton Horsley, M.D., F.A.C.S., Surgeon-in-Charge of St. Elizabeth's Hospital, Richmond, U.S.A. Price 16s. net.

LEWIS, H. K., AND CO., LIMITED, London.
Report of the Excavations at Grime's Graves, Weeting, Norfolk. Report of Prehistoric Society of East Anglia. Price 5s. net.

LONGMANS, GREEN AND CO., London.
The House Fly. By F. W. Fitzsimons, F.Z.S., F.R.M.S. Price 1s. net.
Conference on War Relief and Personal Service, June, 1915. Price 1s. net.

LIVINGSTONE, E. AND S., Edinburgh.
Forensic Medicine and Toxicology. By R. J. M. Buchanan, M.D., F.R.C.P. Lond. Eighth edition, revised and enlarged. Price 7s. 6d. net.

SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., London.
Outlines of Speeches. By Charles Seymour.

Notes, Short Comments, and Answers to Correspondents.

STUDENTS' NUMBER OF THE LANCET.

INFORMATION intended for the Students' Number of THE LANCET must be sent WITHOUT DELAY, addressed to the Sub-Editor, and marked on the envelope "Students' Number Only."

SEYCHELLES HEALTH REPORT.

THE Seychelles Islands, in the Indian Ocean, which have been a British possession since 1814, and were erected into a separate colony in 1903, are the subject of a report which has just been presented to Parliament by the Governor and Commander-in-Chief, Lieutenant-Colonel C. R. M. O'Brien, C.M.G. He states that the population is now estimated at 24,141 (12,257 males and 11,884 females) and is steadily increasing. In the year 1914 there were 709 births, of which 255 were illegitimate, and 372 deaths, the birth-rate being 29·66 per 1000 of population and the death-rate 15·36 per 1000. There was no epidemic during the year. Excellent results continue to be obtained from the use of emetine in the treatment of dysentery. Two cases of beri-beri were treated at the hospital. Venereal disease and ankylostomiasis are very prevalent, but steps have been taken which, it is hoped, will mitigate the first-named evil. The colony has been promised the visit of an expert (the expenses of whom will be generously borne by the International Health Commission), who will advise on measures to be taken to eradicate and prevent the spread of ankylostomiasis. Some of the outlying islands are still affected by chiggers and, in spite of precautions taken, a few cases have appeared in Mahé (the principal island), but the chief medical officer does not consider there is any danger of the pest spreading. The general sanitary condition of the colony during the year was satisfactory. The campaign against rats was continued in Victoria (the capital) with success, 2627 rats being accounted for.

The total number of in-patients treated in the Victoria Hospital, Mahé Island, was 528, and there were 28 deaths. At the Government dispensaries 1965 persons received treatment during the year. In the leper asylum on Round Island, Praslin, 2 patients died and the number remaining at the end of 1914 was 7. The provision of a second quarantine station at Long Island will prove a great convenience and can be utilised as an isolated station for infectious diseases on emergency. A cottage hospital has been built on the Island of Praslin which should be, when opened, a great boon to the inhabitants. Unfortunately, owing to lack of funds, it was not found possible in 1914 to equip the building to receive patients.

The total rainfall for the year 1914 was 109·07 in., compared with 67·71 in. in 1913. This large difference demonstrates the variable character of Seychelles weather conditions. Rain fell on 191 days. The heaviest fall was on Oct. 6th, when 5·6 in. were registered. August was the driest and March the wettest month. The mean temperature was 80·8° F., compared with 79·8° in 1913. The range was from 72·9° on March 19th to 88·9° on May 8th. The south-east monsoon commenced in the middle of May and ended towards the middle of October. The highest velocity recorded was on August 24th, when it reached 22·6 miles per hour.

THE TREATMENT OF SPRAINS.

WE have received from a valued correspondent an account of a method of treatment of sprains which he has found of great service, and though it differs but little from methods already employed it contains some new points. Our correspondent holds that it is of great importance to prevent effusion into the injured areolar tissues, so that the ruptured fibrous or muscular tissues may not be kept apart thereby, and this he effects by bandaging the part firmly with strapping, three-quarters of an inch in width; the most convenient form is that supplied in rolls, and in an emergency the "adhesive tape" of the electrician may be used with satisfactory results. The strapping should be firmly applied over the affected part, but a free space should be left—e.g., over the instep in the case of the ankle—to prevent interference with the circulation. The application should be made as soon as possible after the injury, but our correspondent has met with success even two days after the accident. The use of hot affusions over the strapping will rapidly remove the pain. A great advantage that is claimed for this method of treatment is a greatly lessened liability to adhesions in consequence of the mobility that remains after the strapping.

THE HEAD-DRESS OF THE ARMY.

THERE has recently been issued and placarded in various places a coloured poster illustrating various styles of civilian hats; the straw, the bowler, the tall silk hat, and in the centre the army hat depicted on a larger scale than the rest, and the legend is "Which ought you to wear?" Apparently the poster was first issued with only the khaki cap and the straw boater, but there was some protest that the boater should not be picked out in this invidious fashion, and then the khaki cap was depicted with its satellites of other sorts. We have no doubt that the question "Which ought you to wear?" is intended to have only a military recruiting significance, but it might also have others of a hygienic nature. For instance, in THE LANCET of Oct. 7th, 1911, we stated under the above title, as follows:—

"The Army Council has decided that the service dress-cap is to be the head-dress for wear by all ranks in the field in temperate climates for all branches of the Expeditionary Force. The present pattern of service dress-cap is a modification of what used to be known as the 'Brodrick' cap with the addition of a peak. It is a comfortable and in many ways a very suitable cap, but it does not give any protection to either the head or neck from the sun or from missiles such as stones when troops are on strike duty. A good head-dress for troops should provide protection to the head and eyes from the heat and glare of the sun, should be waterproof, and afford little resistance to wind, should be possible of ventilation, light, durable, and comfortable, and should not press unduly on the scalp. The solution of these difficulties remains to be effected, as it is almost impossible to combine all the above advantages in a head-dress appropriate to all climates and at the same time suitable for peace and war."

Some of these caps have been modified by their users in various ways. One such we have seen is a sheet of mica in a frame intended to fit the interior of the hat covering the crown. It is intended to be grease and waterproof. There are also separate waterproof khaki covers to slip over the ordinary cap. Others have a curtain to be let down to protect the nape of the neck. The rigid top has disappeared from many of the latest caps supplied to the troops, and evidently modification, with an eye to actual circumstances, is still going on.

A BEETLE IN THE EAR.

To the Editor of THE LANCET.

SIR,—One hears from time to time sensational stories of how some person got an insect into his ear which eventually "ate its way into the brain," and the like. A genuine case of a comparatively large beetle entering the ear may therefore be of interest.

One evening recently a native porter came to me complaining of great pain in the right ear, and it was quite obvious there was something wrong. Every now and then he seemed to be in very severe pain and was quite distraught, holding both hands to the ear and rolling on the ground. He maintained stoutly that an insect had just got into his ear while he was eating his evening meal and that he had had no pain previously. On examination I could see nothing, having no speculum; there was no bad odour such as is associated with chronic otorrhœa. The ear was gently syringed with warm water, when, to my surprise, on the third occasion a large beetle came out and floated round and round in the basin, kicking its legs and very much alive. It was a common species of coprid lamellicorn, quite half an inch long, with a body almost as stout as a lead pencil, one of the dung beetles that come to light and buzz about clumsily. It had probably hit against the man's ear, clung on, and walked in. As these beetles are built for burrowing in earth and are extremely powerful, the efforts which this one made to force its way through the tympanic membrane must have caused great distress.

I am, Sir, yours faithfully,

GEOFFREY D. H. CARPENTER, M.D.,
Uganda. Captain, Uganda Medical Service.

THE CRAIGLEITH HOSPITAL CHRONICLE.

THE June issue of this well-edited little journal begins a new volume, and has for a presentation-plate the bust of a typical Scotch soldier in khaki. The cartoons are particularly good and the letterpress is worthily maintained. In the July issue the editor gives some account of what has been done with the proceeds from the sale of the first volume. The journal is published for the benefit of the sick and wounded at the hospital from which it takes its name, and the profits on the journal have been spent in providing "extra comforts" in the shape of tobacco, additions to the library, new furniture, and so forth. Among the articles in the current issue is an interesting account of the Rhine Frontier, by Major J. D. Comrie, R.A.M.C.(T.), while the instalment of the Story of Some Scottish Regiments is a brief account by Dr. J. A. MacDougall of the heroic records of the Scots Guards.

DR. DEE'S MAGIC MIRROR.

Messrs. Christie are selling this week the collection of the late Mr. Jeffery Whitehead, of East Grinstead, who died on May 26th, at the age of 84. He was for many years a keen art collector. Among the miscellaneous objects is Dr. Dee's magic mirror from Horace Walpole's Strawberry Hill collection. John Dee (1527–1608) is known as the Elizabethan Crystal Gazer or the Mortlake Philosopher and Astrologer. He was assisted by one, Edward Kelly, who had the reputation of a skryer and incidentally of a rogue. The following account of Dee's mirror, together with an illustration of it, appeared in that interesting book, "Ten Thousand Wonderful Things," published about half a century ago: "It is a polished oval slab of black stone, of what kind we have not been able to ascertain, but evidently of a description which was not then common in Western Europe, and Dr. Dee, who died in 1608, may have considered it as extremely precious, and as only to be obtained by some extraordinary means. It was one of the ornaments of the museum of Horace Walpole at Strawberry Hill; and Walpole has attached to it a statement of its history in his own hand-writing, from which we learn that it was 'long' in the possession of the Mordaunts, Earls of Peterborough, in whose catalogue it was described as 'the black stone into which Dr. Dee used to call his spirits.' It passed from that collection to Lady Elizabeth Germaine, from whom it went to John Campbell, Duke of Argyll, whose son, Lord Frederick Campbell, presented it to Horace Walpole. This interesting relic was bought at the Strawberry Hill sale for the late Mr. Pigott; and at the more recent sale of that gentleman's collection it passed into the hands of Lord Londesborough. Its history and authenticity appear, therefore, to be very well made out. The family of the Mordaunts held a prominent place in English history during the whole of the seventeenth century, and it is hardly probable that they would have received an object like this without having good reason for believing that its history was authentic."

It is believed that Butler alluded to this identical stone in his well-known lines:—

"Kelly did all his feats upon
The devil's looking-glass or stone,
When, playing with him at bo-peep,
He solv'd all problems ne'er so deep."
Hudibras, Part II., Canto 3.

"ARQUEBUSADE."

To the Editor of THE LANCET.

SIR,—With reference to the article by Dr. Léon Blanc on the Treatment of Wounded Soldiers by the Thermal Waters of Aix-les-Bains, published in THE LANCET of July 24th, I have been interested in his statement that "these waters gained their original reputation by their effects on wounds inflicted by the arquebuse (hence the name of 'arquebusade' which has been adopted ever since)." As I have failed to find much information as to "arquebusade" in the ordinary French dictionaries I should be glad if you could tell me where further reference to it could be found.

I am, Sir, yours faithfully,

July 27th, 1915. INTERESTED.

*** Bouillet says that "under the name of *eau d'arquebusade* is known a vulnerary water anciently employed for external use in wounds produced by firearms. The *eau d'arquebusade de Theden*, which was for a long time in favour, was a liquor prepared by mixing together 150 grammes of concentrated sulphuric acid and 720 grammes of alcohol of 80 per cent., and adding to the mixture a solution of 360 grammes of sugar in 150 grammes of water and 720 grammes of filtered sorrel juice. In Germany this water was prepared by mixing together 1 part of sulphuric acid, 6 of vinegar, the same of alcohol, and 2 of skimmed and clarified honey." It also was known under the names of *aqua sclopetaria* and *aqua catapultum*, besides *aqua vulneraria spirituosa*, which in the German Pharmacopœia of the first edition was then prepared from numerous aromatic plants as follows: 1 part each of peppermint, rosemary, rue, salvia leaves, herba absinthii, lavender flowers, 18 of dilute alcohol, and 50 of water, to be macerated two days and 36 parts distilled.—ED. L.

THE FILTHIEST TRADE IN LONDON.

Dr. A. E. Thomas, the medical officer for Finsbury, in his annual report justly describes the trade of the itinerant ice-cream vendor as the filthiest trade of London. He says: "Their ice-cream is, or may be, made in the gutter, and the stain of its place of origin adheres to it throughout its existence. The use of the small conical glasses, which are mouthed and sucked by children, is most undesirable. For cleaning they are dipped into dirty water which contains the mouth secretions of previous buyers, swabbed with a small wet offensive duster and up-ended on a soiled barrow top."

DENTAL SERVICES FOR THE TROOPS.

Sir Henry Norman asked the Under Secretary for War on one of the last days of the closing session, to state the names, rank, and pay of the consultants in dentistry to the forces abroad; how many dental surgeons were employed upon dentistry alone for the forces at home and abroad; and the numbers of each rank. Mr. Tennant replied that there were no consultants in dentistry to the forces abroad. There are, it appears, 48 qualified dental surgeons serving abroad and 48 at home in the rank of lieutenant. There are also 93 honorary consulting dental surgeons at home. These numbers do not include the dental surgeons employed by local military authorities at home, nor those doing duty with colonial troops. Mr. Tennant added that he did not know whether it was the case that there had been a certain amount of invaliding from bad teeth, but it did not follow from that that there was an insufficiency of dentists at the front.

Enquirens.—Since our former reply was published in THE LANCET of July 24th it has occurred to us that Operative Gynæcology, by Dr. H. S. Crossen, of St. Louis (London: H. Kimpton. 1915. Price 31*s.* 6*d.*), a review of which will shortly appear in our columns, would fulfil our correspondent's requirements.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.

TUESDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.
THURSDAY.—5.15 P.M., Clinical Lecture.

For further particulars of the above Lectures, &c., see Advertisement Pages.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1915, which was completed with the issue of June 26th, were given in THE LANCET of July 3rd.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1915 are now ready. Bound in cloth, gilt lettered, price 16*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

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SOLE AGENTS FOR AMERICA—Messrs. WILLIAM WOOD AND CO., 51, Fifth Avenue, New York, U.S.A.

METEOROLOGICAL READINGS.

(Taken daily at 9.30 a.m. by Steward's Instruments.)

THE LANCET Office, August 4th, 1915.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
July 29	30·140	W.	0·23	129	72	53	56	60	Fine
,, 30	30·130	W.	...	125	73	54	56	58	Fine
,, 31	29·910	W.	...	116	71	57	57	59	Overcast
Aug. 1	29·710	W.	...	136	74	60	62	65	Fine
,, 2	29·570	S.W.	0·62	117	68	59	60	62	Cloudy
,, 3	29·530	S.W.	0·45	114	67	57	58	59	Raining
,, 4	29·870	W.	...	126	70	57	59	61	Cloudy

The following magazines, journals, &c., have been received:—Craigleith Hospital Gazette, Canada Lancet, Canadian Practitioner and Review, Shield, Bulletin de l'Office International Publique, National Medical Journal, Journal of Nervous and Mental Disease, Journal of Obstetrics and Gynæcology of the British Empire, Interstate Medical Journal, American Journal of Obstetrics, Archives of Internal Medicine, American Journal of Clinical Medicine, British Journal of Dermatology, Calcutta Medical Journal, Proceedings of the Royal Society of Medicine, Journal of Tropical Medicine and Hygiene, Practitioner, Temperance Advocate, Review of Neurology and Psychiatry, Psychoanalytic Review, American Medicine, British Journal of Dental Science, Canadian Medical Association Journal, Revista de la Asociacion Medica Argentina, Journal of Hygiene, Medical Journal of South Africa, South African Medical Journal, Journal of Mental Science.

Communications, Letters &c., have been received from—

A.—Messrs. Allen and Hanburys, Lond.; Lieutenant Adolphe Abrahams, R.A.M.C., Aldershot; Messrs. Arrowsmith, Bristol; Mr. E. Weaver Adams, Slough; Dr. John Aulde, Philadelphia; A. J. M. C.; Mr. F. Aldridge, Lond.

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J.—Mr. T. J. Jones, Totton; J. C.; J. G.; J. H. R.

K.—Mr. G. Kirkpatrick, Leicester; Surgeon-General S. Kimura, Tokio; King Edward VII. Hospital, Cardiff, Secretary of.

L.—Leeds University, Dean of; Messrs. H. K. Lewis and Co., Lond.; Dr. T. D. Luke, Peebles; London School of Massage, Secretary of; Leeds Public Dispensary, Secretary of; Local Government Board, Lond., Secretary of; Dr. G. S. L'Estrange, Brisbane; Liverpool, Medical Officer of Health of.

M.—Dr. James B. Mennell, Lond.; Messrs. Macmillan and Co., Lond.; Mr. J. Murray, Lond.; Mellin's Food, Lond.; Dr. J. D. McCrindle, Northampton; Dr. F. R. H. Meyrick, Brighton; Lieutenant A. C. McAllister, R.A.M.C., France; Dr. A. J. McClosky, Kuala Lumpur; Dr. J. Campbell McClure, Lond.; Dr. John D. Malcolm, Lond.; Sir W. Milligan, Manchester; Dr. Robert Milne, Lond.

N.—Dr. E. Norton, Folkestone; National Sanatorium Association, Lond., Hon. Secretary of; *Newspaper World*, Lond., Manager of.

O.—Oxford Eye Hospital, Hon. Secretary of; Captain J. H. Owen, R.A.M.C., Ripon; Captain A. P. O'Connor, Rouen; Mr. John R. Orpen, Dublin; Lieutenant-Colonel D. C. Leyland Orton, R.A.M.C.(T.).

P.—Messrs. Parke, Davis and Co., Lond.; Principal, Banwell; Messrs. G. Philip and Son, Lond.

Q.—Queensland, Government Statistician, Brisbane.

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